1967

Announcement Graduate and Undergraduate - The School Year 1965-67

Prairie View A&M College

64-65

PRAIRIE VIEW

Announcements for 1965-66 and 1966-67

AGRICULTURAL AND MECHANICAL COLLEGE OF TEXAS
PRAIRIE VIEW, TEXAS

1965

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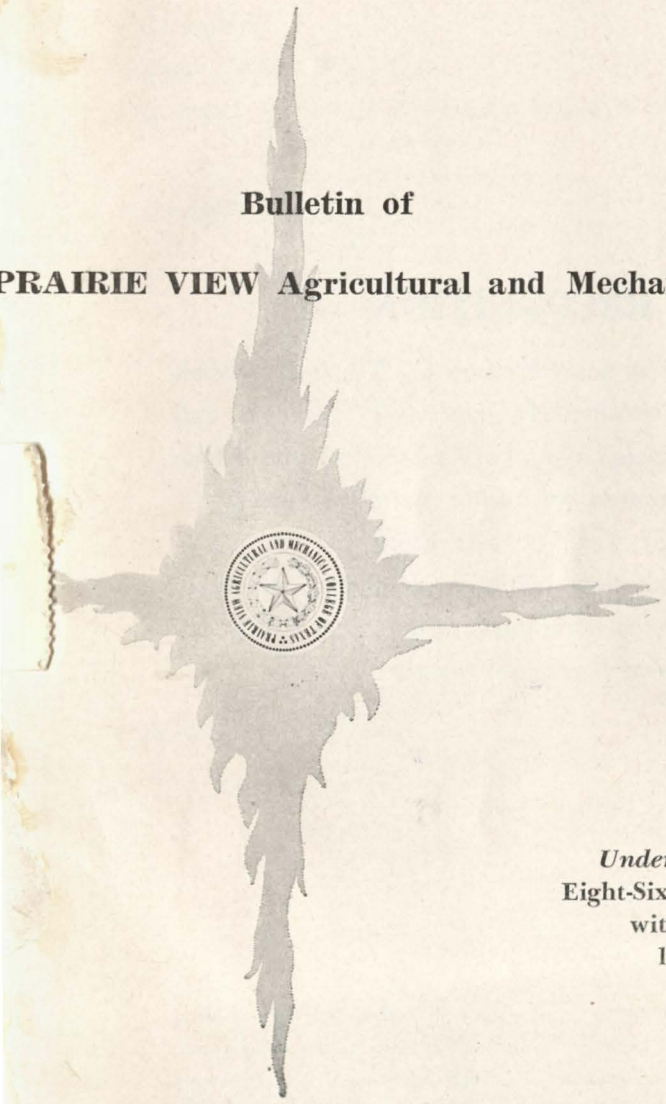
Bulletin of

PRAIRIE VIEW Agricultural and Mechanical College of Texa



Undergraduate and Graduate
Eight-Sixth Catalog Edition 1964-65
with Announcements for
1965-66 and 1966-67

RECOGNITION

This institution is accredited by the Texas Education Agency, the Southern Association of Colleges and Secondary Schools, and the Association for Texas Colleges. It is accredited by the National Council for Accreditation of Teacher Education for the preparation of elementary teachers, secondary teachers, and school service personnel, with the master's degree as the highest degree approved.

COVER PICTURE

ADMINISTRATION BUILDING . . . Houses the offices of the President, Dean of Instruction, Registrar, Business Manager, Extramural Director, Director of Student Life, Director of College Information, Data Processing Supervisor, Chaplain, College Counselor and Deans of Women and Men.

(ENTERED AS SECOND-CLASS MAIL MATTER, AT THE POST OFFICE AT HEMPSTEAD, TEXAS) ISSUED AT PRAIRIE VIEW COLLEGE BRANCH, FOUR TIMES YEARLY.

VOLUME 56, NUMBER 1 NOVEMBER

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Official Calendars

REGULAR SESSION—1965-66 (Official)

September 7	Faculty Meeting
September 8-9	Freshman Orientation
September 9-11	Registration
September 13	Classes Begin
September 18	Registration Closes
September 23	End of Change of Program Period
September 25	12th Class Day
September 28	12 Class Day Reports Due in Registrar's Office Before Noon
November 9-10	Intra Semester Evaluations
Nov. 24 (Noon) - Nov. 29 (8:00 a.m.)	Thanksgiving Holidays
December 18 (Noon)	Christmas Holidays Begin

1966

January 3	Classes Resume
January 17-22	Final Examinations
January 23	First Semester Closes
January 23-24	New Students Report
January 25-27	Registration, Second Semester
January 28	Second Semester Classes Begin
February 10	Registration Closes
February 10	End of Change of Program Period
February 12	12th Class Day
February 14	12th Class Day Reports Due in Registrar's Office Before 5:00 p.m.
March 16-17	Intra Semester Evaluations
April 7 (Noon) - April 12 (8:00 a.m.)	Easter Holidays
May 22	Commencement and Parents Day
May 23-27	Final Examinations
May 28	Second Semester Closes

SUMMER SESSION—1966

June 6-7	Registration, First Term
June 8	Classes Begin
June 13	Registration Closes
July 4	American Independence Holiday
July 17	First Term Closes
July 18	Registration, Second Term
July 19	Classes Begin
July 25	Registration Closes
August 27	Second Term Closes

REGULAR SESSION—1966-67 (Proposed)

September 6	Faculty Meeting
September 7-8	Freshman Orientation
September 8-10	Registration
September 12	Classes Begin
September 17	Registration Closes
September 22	End of Change of Program Period
September 24	12th Class Day
September 27	12th Class Day Reports Due in Registrar's Office Before Noon
November 9-10	Intra Semester Evaluations
Nov. 23 (Noon) - Nov. 28 (8:00 a.m.)	Thanksgiving Holidays
December 17 (Noon)	Christmas Holidays Begin

1967

January 2	Classes Resume
January 23-28	Final Examinations
January 29	First Semester Closes
January 29-30	New Students Report
February 1-3	Registration, Second Semester
February 4	Second Semester Classes Begin
February 9	Registration Closes
February 9	End of Change of Program Period
February 17	12th Class Day
February 20	12th Class Day Reports Due in Registrar's Office Before 5:00 p.m.
March 20-21	Intra Semester Evaluations
March 23 (Noon) - March 27 (8:00 a.m.)	Easter Holidays
May 21	Commencement and Parents Day
May 22-26	Final Examinations

SUMMER SESSION—1967

June 5-6	Registration, First Term
June 7	Classes Begin
June 12	Registration Closes
July 4	American Independence Holiday
July 16	First Term Closes
July 17	Registration, Second Term
July 18	Classes Begin
July 24	Registration Closes
August 26	Second Term Closes

The Texas A&M University System

Composed of Texas A&M University and all colleges, agencies and services under the supervision of the Board of Directors of Texas A&M University, including:

Texas A&M University
- Texas Agricultural Experiment Station
- Texas Agricultural Extension Service
- Texas Engineering Experiment Station
- Texas Engineering Extension Service
- Texas Maritime Academy
- Texas Transportation Institute

James Connally Technical Institute

Tarleton State College

Prairie View Agricultural and Mechanical College

Texas Forest Service

Rodent and Predatory Animal Control Service

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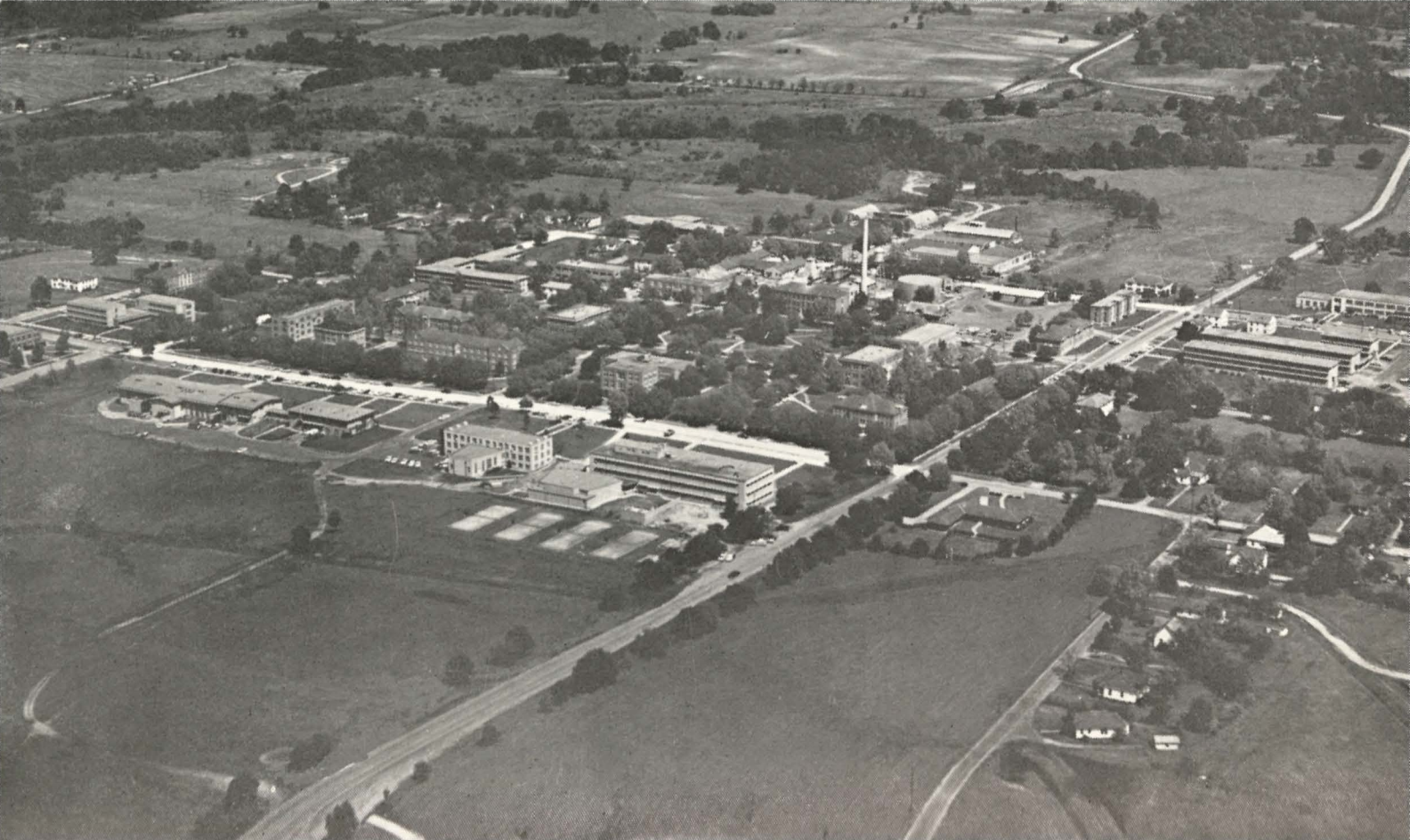
JOHN C. CALHOUN, JR. ..... *Vice-President for Programs*

W. C. FREEMAN ..... *Vice-President and Comptroller*

HOWARD BADGETT ..... *Manager of Physical Plants*

ROBERT G. CHERRY ..... *Assistant to the President*



General Information

LOCATION

Prairie View A. and M. College is located in Waller County, forty-six miles northwest of Houston. Buses discharge passengers at the Prairie View Station. Taxi service is available to and from the station.

PURPOSE

Three separate and distinct functions of Prairie View A. and M. College are clearly set forth in State and Federal acts for its establishment and support.

Firstly, it is a college for the preparation and training of teachers.

Secondly, it is a four-year college offering liberal arts and scientific curricula.

Thirdly, it is a Texas Land Grant College providing opportunities for training in Agriculture, Home Economics, Engineering and related branches of learning.

In addition, the institution offers training in health and education so that it may give to the state professionally trained nurses and provide opportunities for observation and practice to newly graduated students of medical colleges.

Prairie View A. and M. College attempts to serve the citizens of Texas at the points of their greatest needs and endeavors to bring the students' training into closer relationship with life's occupations.

The central theme of the philosophy of the institution is that education must have the objective of making a worthwhile life and respectable living.

INSTRUCTIONAL ORGANIZATION

The institution is organized for instruction into seven major divisions as follows:

The School of Agriculture
The School of Arts and Sciences
The School of Engineering
The School of Home Economics
The School of Industrial Education and Technology
The School of Nursing
The Graduate School

HISTORY

The Fifteenth Legislature of the State of Texas met in the year 1876. One of the acts of that Legislature provided for the establishment of "An Agricultural and Mechanical College" for Negro citizens to be located in Waller County. L. M. Minor was elected first teacher of the school (Alta Vista Agricultural College). He served in this capacity from 1878 to 1879. In the last year of his principalship a legislative act provided for reorganization of the college and made funds available for the training of public school teachers therein. The teaching of Military Tactics was initiated in compliance with the Legislative act of 1876.

The second principal, E. H. Anderson, served from 1879 to 1884; and L. C. Anderson, the third principal, held the position for the next twelve years. The gray stone Administration building, whose architectural design was widely admired, was erected in 1889, and the Old Agricultural Building was erected in 1890. During L. C. Anderson's administration, the 20th Legislature agreed to an "Agricultural and Mechanical Department" to be attached to the Normal; the Hatch Act brought the college a branch Experiment Station.

For the next nineteen years, E. L. Blackshear served "Prairie View Normal" as principal. During his administration, significant growth was made in the curriculum and the plant. In 1899 the name was changed to "Prairie

AERIAL VIEW . . . Prairie View's Main Campus.

View State Normal and Industrial College," and the new name indicated the enlargement of the curriculum. A four-year college course was authorized by the State Legislature in session 1901. Among additions to the plant were two dormitories for men, Foster Hall (1909) and Luckie Hall (1909); a dormitory for women, Crawford Hall (1912); and a combination Auditorium-Dining Hall building (1911).

I. M. Terrell, the fifth principal, held the position during the war years 1915-1918. Despite the world conflict, the school plant expanded widely to accommodate mechanic and household arts; a Household Arts building, the Power and Ice Plant, and the Laundry were erected in 1916; and in 1918 Spence Building for the Division of Agriculture was erected. The close of World War I brought the activation of a recognized Reserve Officers Training Corps to the campus. The Cooperative Extension Service was also launched at this time.

The sixth principal of Prairie View was J. G. Osborne, whose tenure lasted from 1918 to 1925. Six buildings were added to the College in 1924 and 1925; the Veterinary Hospital, the Science Building, the College Exchange, the Elementary Training School, a Home Economics Practice Cottage, and a Music Conservatory. The Nursing Division was founded in 1918.

In 1926, W. R. Banks became the seventh principal of Prairie View. He served until August 31, 1947, at which time he became Principal Emeritus. He held the position longer than any of his predecessors, and Prairie View developed along several lines in this period. The physical plant doubled its size by adding six buildings valued at more than $100,000.00 each. The Dining Hall and the Hospital, three apartment houses for men teachers, three dormitories for women, a greenhouse, an incubator house, a classroom building, a new Auditorium-Gymnasium, a new Mechanic Arts building, and over sixty cottages for families were additions to the physical plant.

One of the significant studies of the period was an exhaustive examination of the objectives and purposes of Prairie View in 1933-34. Out of this study emerged Principal Bank's most often quoted statement: "Prairie View College must serve the State of Texas at the points of her greatest needs." The establishment of the Prairie View Conference on Education in 1931 is an important event in the history of the College. In the years that the Conference has met, Prairie View has been host to educators, ministers, doctors, business men and women, housewives, social workers, and farmers.

In the establishment of the Division of Graduate Study in 1937 Prairie View College added another page to its expanding history.

In 1936 the first buildings were constructed to house the N.Y.A. resident center, and a new chapter in Vocational Training for youth was opened. The project was enlarged and made a training center for Negro men in critical occupations for support of the war effort. The men filled positions as welders, mechanics, pipe fitters, machine operators, and moulders in shipyards, foundries, and machine shops all over the nation. The project terminated in July 1943. The facilities are now used for vocational trade courses.

In July 1943, a training unit of the Army Specialized Training Program was established with a maximum strength of 200 trainees enrolled in BE-1 Curriculum.

In 1943, when the Forty-eighth Legislature met in January, it appropriated $160,000.00 for the erection of a Library Building. This amount was supplemented by $20,000 00 for equipment and books.

The name of the college, Prairie View Normal and Industrial College, was changed to Prairie View University in 1945, by an act of the 49th Legislature.

The Forty-ninth Legislature passed the bill permitting Prairie View University to offer, as the need arises, all courses offered at the University of Texas.

On September 1, 1946, Dr. E. B. Evans became the eighth principal of Prairie View.

The Fiftieth Legislature of the State of Texas, by Act signed by the Governor on February 27, 1947, changed the name of the school from Prairie View University to Prairie View Agricultural and Mechanical College of Texas. The Act provides that courses be offered in agriculture, the mechanic arts, engineering and the natural sciences connected therewith, together with any

other courses authorized at Prairie View at the time of the passage of this Act, all of which shall be equivalent to those offered at the Agricultural and Mechanical College of Texas.

In March, 1947, the old Academic Building which housed the principal administrative offices, was destroyed by fire. The Fiftieth Texas Legislature, which was then in session, made an emergency appropriation of $300,000.00 for the erection of the present Administration Building which was completed in March 1949.

The title of the Principal was changed to Dean by the Board of Directors and became effective during the 1947-48 school year. On September 1, 1948, the title of Dean was changed to President and on December 3, 1948, E. B. Evans, the eighth Principal, was inaugurated as the first President of Prairie View Agricultural and Mechanical College of Texas.

The Divisions of Agriculture, Arts and Sciences, Home Economics, and Mechanic Arts were changed to Schools of Agriculture, Arts and Sciences, Home Economics, and Engineering, effective September 1, 1950. The Directors of the respective schools were named Deans, becoming effective at the same time.

A new women's dormitory was completed in September 1950 at a cost of $350,000.00 and was named for the late Dean of Women, Miss M. E. Suarez. It houses 247 seniors and has facilities for recreational and social entertainment. A similar building for male students, named for a former teacher, J. M. Alexander was completed in 1952. The E. B. Evans Animal Industries Building, valued at $284,000.00, was completed in 1951, and the Gibb Gilchrist Engineering Building in 1952, at a cost of $258,170.00.

Construction of still more adequate housing for the rapidly-growing student body was completed in early 1955 with additions to Suarez Hall and to Alexander Hall costing approximately $550,000.00. These additions provided space for 240 more women students and 250 more men students.

A dairy barn and utilities warehouse were completed at a cost of $32,000.00 and $15,000.00 worth of water and sewer line installations were added to the college system. Construction of an exchange store and a single faculty women and a single faculty men's dormitories were also completed in 1955. The latter has been named for George W. Buchanan, former manager of the exchange and ex-teacher of mathematics. The Faculty Women's dormitory was named for the late Lucille B. Evans, wife of President E. B. Evans. The hospital of 1929 has recently been named for J. C. Osborne, the sixth principal of the College.

A new and completely modern Home Economics building, named for Mrs. Elizabeth C. May Galloway (Elizabeth C. May building) former Dean of the School of Home Economics, was added in 1957. The old Home Arts structure was renovated into a modern Music building.

The Board of Directors of the Texas A&M University System approved a $3,000,000.00 building and improvement program for the college in 1957. The new $1,000,000.00 Memorial Student Center was completed early in 1960 and construction on a $2,000,000.00 Science building was completed in 1961. Other construction during this period included building utilities, street extensions, storm sewers, and underground electric facilities. The $1,500,000.00 Health and Physical Education Building, with a seating capacity of 5,000, was completed in 1964. Under construction now are two new air-conditioned dormitories, valued at $2,500,000, which will house 900 students (450 male and 450 female).

The College was accepted for membership in the Southern Association of Colleges and Secondary School in December, 1958, and later received reendorsement and full approval of the National Council for Accreditation of Teacher Education. Improvements in offerings and facilities for Science, Mathematics and Engineering also resulted during the years from 1958 to the present time.

President E. B. Evans, who in 1959 became eligible for modified retirement, was asked by the Board of Directors to continue as President of the College. This great tribute came in the midst of many other state and national honors for Dr. Evans in recognition of outstanding service to education.

THE W. R. BANKS LIBRARY

The library, named in honor of the former chief executive, Willette Rutherford Banks, is located between Evans and Luckie Halls — just north of the Administration Building. It has a book capacity of some 100,000 volumes, study space for some 500 students, simultaneously, and was erected at a cost of $171,867.91. The building has three floors and a book stack section with five levels.

The library, being air-conditioned, is ideal for serious study, for investigation and research, and for recreational reading for those who wish to use its facilities. Its beautiful and convenient study appointments include the Reference Room, seating 52; the Current Periodicals Room, seating 42; the Special Collection Room, seating 20; and the Reading Lounge, seating 31. Artistic tastes of readers are fostered in the Art Room.

The various collections of the library contain 74,432 books, 11,702 bound magazines, 3,500 volumes of unbound magazines, 60,353 uncatalogued documents, 2,041 pictures, 791 subscriptions as well as numerous films, filmstrips, maps, microcards, microfilms, records, slides, etc., etc.

In addition to the resources of The W. R. Banks Library readers may have access to those of other libraries through interlibrary loans and other cooperative arrangements. The library staff will make such arrangements upon proper request.

To secure the greatest benefit from the services made available to readers in the library each reader must become acquainted with the library rules and regulations and should seek timely guidance from the qualified members of the library staff.

To facilitate effective use of the library on the part of its readers the staff in each service area gives consultation, informational, and directional services to those who require such services. Please feel free to request such help when it is needed.

Library Service hours are as follows:

Monday-Friday: 8:00 a.m.-10:00 p.m.
Saturday: 8:00 a.m.-5:00 p.m.
Sunday: 2:00 p.m.-5:00 p.m.

Any exceptions to these hours will be posted in the library.

There are no services available on the Top Floor of the library and in the Current Periodicals Room on Friday evenings and Saturday and Sunday afternoons.

EXTRA-CURRICULAR ACTIVITIES

Religious Influences

While no particular denominational influence is exerted at Prairie View A. and M. College, the authorities of the institution are thoroughly committed to the belief that religious training benefits the student. Religious activities, promoted under the direction of the College Chaplain, include Sunday School, Morning Worship, and Vesper Services.

Student Organizations

A wholesome, integrated program of student activities is provided through student organizations. Students may choose, according to individual interests, any activities which meet their desires for companionship, their needs for recognition or growth, their needs for creative effort or activities which supplement their classroom work in the many departmental or interest groups on the campus. Such organizations are **Home Town Clubs** (where ten or more students are from the same town); **Departmental or Divisional Clubs:** New Farmers of America, New Homemakers of Texas, Industrial Education Club, Spanish-French Club, Scientific Society (Beta Phi Club), Business Administration and Business Education, Inc., Home Economics Club, Mathematics Club, Physical Education Club, Society of Architects and Engineers, Student National Education Association, Mu Alpha Sigma Music Society, Library Science Club,

Charles Gilpin Dramatic Club, National Society of Pershing Rifles, National Society of Scabbard and Blade, Association of U. S. Army, Les Beaux Arts Cultural Club, Charm Club; **Religious:** YMCA, YWCA, Sunday School, Usher Board, Newman Club, Methodist Student Movement, Church of Christ; **Social:** Barrons of Innovation, Club Crescendo, Club 26, Les Belles Lettres, K. O B's, Progressive Veterans; **Honorary Society:** Alpha Pi Mu (of Alpha Kappa Mu); Beta Iota Chapter (of Epsilon Pi Tau).

Athletics

The Department of Athletics sponsors the following major varsity sports for men: football, basketball, track, tennis, baseball, and golf. The varsity program for women includes basketball, track and tennis.

The intramural sports program, conducted for all students, includes boxing, football, basketball, baseball, tennis, track, softball, golf and volley ball. Each student is expected to participate in at least one intramural sport.

Athletes from Prairie View participate in national and international athletic events.

Prairie View A. and M. College is a member of the Southwestern Athletic Conference. The College is nicknamed "Panthers," and the School Colors are purple and gold.

AWARDS AND PRIZES

Prizes and awards are made for accomplishments in various fields of endeavor throughout the College. They are sometimes monetary in nature and sometimes in the form of keys, cups, pins, or insigna. A short description of them is given below.

HARRISON-VALIEN SCHOLARSHIP PRIZE. A cash award presented to the graduating senior who has maintained the highest scholastic average over the four-year period.

T. K. LAWLESS AWARD. A cash award to the graduating senior who during four years at Prairie View A. and M. College has made the most outstanding contributions to the institution.

ALEXANDER SUNDAY SCHOOL AWARD. A cash award of $50.00 for tuition to the student who during the school year, has made an outstanding or noteworthy contribution to the Sunday School program. The student should have at least a satisfactory grade point average and be in need of financial assistance.

JAMES E. GUINN-EMMA J. GUINN AWARD. A cash award presented each year to the science major of junior standing having the highest scholastic average.

HILLIARD MONTGOMERY AWARD. A cash award presented to the science major having the highest average in science courses during the year.

LOCAL PRAIRIE VIEW ALUMNI AWARD. A cash award of $50.00 for tuition to the student most deserving from the standpoint of need plus consideration of scholarship and citizenship records while in attendance at the College.

ANNE L. CAMPBELL AWARD. A cash award presented to the junior English major having the highest scholarship average and the most outstanding record of participation in extracurricular activities.

MAY-GALLOWAY AWARD. $25.00 for outstanding Freshman Home Economics student.

HOME ECONOMICS FACULTY AWARD. $50.00 to the oustanding Sophomore Home Economics student.

CHARM AND HOME ECONOMICS CLUBS AWARD. $25.00.

BERNICE B. BROOKS MEMORIAL AWARD. A cash award of $10, given annually to the most outstanding student in Business. Given in memory of Miss Brooks, who was a graduate and an employee of the College.

VOCATIONAL REHABILITATION

The Texas Education Agency, through the Vocational Rehabilitation Division, offers assistance for tuition to students who have certain physical disabilities, provided the vocational objective selected by the disabled person has been approved by a representative of the Division. Application for Vocational Rehabilitation assistance should be made to the nearest rehabilitation officer or to the Director of Vocational Rehabilitation, P. O. Box BB, Capitol Station, Austin, Texas.

LOAN FUNDS

Prairie View A. and M. College has these loan funds available to students:

1. The Hogg Memorial Loan Fund of $25,000.00 was given to Prairie View by the late W. C. Hogg in the year 1936. The interest from the fund is available for student loans to complete payment of monthly fees. At present the amount available for loans is in excess of $4,000.00.
2. The Abner Davis Memorial Loan Fund was established in 1937 by the students at Prairie View in memory of Abner Davis, who died in 1930 from injuries received in a football game between Prairie View College and Texas College. The Class of 1927 left a loan fund of $53.15, and the Prairie View Club of Los Angeles, California, donated $52.50 for student loans. These have been added to the Abner Davis Loan Fund. At present $1,000.00 are available for loans to students.
3. National Defense Student Loans are available to needy students who are eligible scholastically. Funds are limited and loans are made to those students who are in need and have demonstrated ability to do college work.
4. United Student Aid Fund Loans are available to students through their local hometown banks on the recommendation of the college. In order to qualify for this loan a student must have completed the freshman year with an overall average of "C" (2.0) or better.

Students desiring loans should make inquiries at the offices of the Fiscal Department and the Director of Student Life. Loans are made with an endorsement of some member of the college staff from Hogg Memorial Loan Fund and the Abner Davis Loan Fund. Loans from the National Defense Student Loan Fund and the United Student Aid Fund are made with the endorsement of the parent or guardian for those students under twenty-one (21) years of age or the spouse in case the student is married.

THE MARY GIBBS JONES AND JESSE H. JONES SCHOLARSHIP PRIZES

Mr. and Mrs. Jesse H. Jones of Houston, Texas, made available to Prairie View $25,000.00 for a scholarship fund in Home Economics (Mary Gibbs Jones, $25,000.00 for a scholarship fund in Agriculture (Jesse H. Jones). Students who are selected receive scholarship of approximately $250.00 per year. Twenty such awards are scheduled to be made annually until 1966. They are divided equally between women and men in Home Economics and Agriculture, respectively. The fund is administrated by Houston Endowment, Inc., of Houston, Texas.

Mr. and Mrs. Jesse H. Jones of Houston, Texas also made available $25,000.00 for Nursing Scholarship (A. Jeanette Jones Scholarship Fund) and $10,000.00 for scholarships in Fine Arts.

All inquiries and applications for these scholarships should be addressed to the Chairman of the Scholarship Committee, Prairie View A. and M. College, Prairie View, Texas.

STATE OF TEXAS SCHOLARSHIPS

Prairie View A. and M. College is authorized to give to the ranking graduate of each of the four-year accredited high schools of Texas a scholarship equal in value to the costs of tuition fees and laboratory fees for a period equivalent to four academic years (eight semesters), provided:

1. The student's initial enrollment is in Prarie View A. and M. College, and
1. The student maintains a satisfactory scholastic and conduct record.

The scholarship has a minimum value of $400.00, plus the cost of laboratory fees for the four-year period.

Delegates to Alpha Kappa Mu National Honor Society's Annual Meeting.

STATE ORPHANAGES SCHOLARSHIPS

The State of Texas exempts citizens of Texas who are high school graduates of the State orphanages of Texas from all required fees, including fees for correspondence courses. Applicants should request this exemption of the Registrar.

TUITION SCHOLARSHIPS

The College is authorized to award a limited number of Tuition Scholarships, not to exceed $25.00 a semester, to needy students who are residents of the State of Texas. Awards will be made on the basis of need, worthiness, and character. Applications for this scholarship should be addressed to the Chairman of the Scholarship Committee, Prairie View A. and M. College, Prairie View, Texas.

EXEMPTION FOR EX-SERVICEMEN

Men and women who are citizens of Texas and who served in the armed forces in World War I, World War II, the Korean conflict, or in certain of the auxiliary services and were honorably discharged (except those who were discharged because of being over the age of thirty-eight or because of a personal request), and who are not eligible for educational benefits provided for veterans by the United States Government, are exempted from the payment of tuition under the provisions of the Hazlewood Act. Such persons must have entered the service as residents of Texas and must have been a resident for a period of not less than 12 months prior to the date of registration. For the purpose of the Hazlewood Act, the following definitions apply: World War I means the period beginning on April 6, 1917 and ending November 11, 1918; World War II means the period beginning on December 7, 1941 through December 31, 1946; and Korean conflict, June 27, 1950 through January 31, 1955. This exemption also extends to children of members of the armed forces who were killed in action or died while in the service in World War II or in the Korean Conflict. To obtain this exemption, a full-sized photostat or certified copy of the discharge papers must be filed for permanent record with the Veterans Counselor.

SCHOLARSHIP IN NURSING

The State of Texas provides a stipend for each student in the School of Nursing. This monthly stipend covers the major cost of the student's maintenance.

In addition to the State stipend, the A. Jennette Jones Scholarship Fund ($25,000.00) is made available to a selected number of students in the Collegiate program. Recipients of the scholarship are given tuition and activity fee assistance.

The College reserves the right to recommend that either the stipend or the scholarship, or both, be denied the student if the student has not maintained at least a "C" average during his first semester of work.

L. E. COLEMAN SCHOLARSHIP

The Texas State Association and Beauty Culturists' League has established an annual scholarship at the college in the name of the late Mrs. L. E. Coleman of Dallas, Texas for applicants who can meet the following critera:

1. High school graduate and licensed Cosmetologist.
2. Graduated in upper 10% of high school graduating class.
3. Satisfactory score in a competitive standardized test administered at the college to all applicants previously approved by the Texas State Association and Beauty Culturists' League Scholarship Committee.

In order to secure consideration and instructions each applicant must furnish her high school transcript and three letters of recommendation to the Scholarship Committee

c/oMrs. Mary A. Clark
Texas State Association and Beauty
Culturists' League
3805 Kenilworth Street
Dallas, Texas

Funds for the Scholarship vary from year to year because they are derived from interest accuring from a grant given the college by the Beautician's Association.

THE CHARLES T. AND KATIE B. BRACKINS SCHOLARSHIP GRANT

The College has a scholarship agreement with an Advisory Board of the Mercantile National Bank at Dallas whereby Mrs. Eloise M. Willis, grantor, makes funds available in the amounts of two $500.00 loans per year in honor of the late Charles T. and Katie B. Brackins, respected and beloved citizens of the City of Dallas. The Advisory Board chooses the recipients from those candidates who can qualify for its consideration. A primary prerequisite is that the applicant must be a graduate of a school of the Dallas Independent School District. Inquiries in regard to the grant may be directed to the Dallas High School Principal of Lincoln High School, Washington Technical High School, Madison High School, or to the Chairman of the Scholarship Committee at Prairie View.

REGULATIONS

Discipline and Government

All students reporting to the institution for registration are subject to the disciplinary rules and regulations of the institution upon date of arrival on the campus.

The College compels no student to enroll or to remain who finds that he cannot meet its academic requirements cheerfully. A student who cannot meet the requirements of the College will be asked to withdraw.

Any student who makes false pretense as to his or her marital status is subject to immediate suspension for an indefinite time. This applies to any person who marries secretly while enrolled as a student or who was secretly married at the time of enrollment.

Day Students are defined as those students who do not live in a College dormitory and who do not eat in the student dining hall. No student will be permitted to enroll as a day student except that:

1. His permanent residence is within commuting distance of the College.
2. All spaces in the College dormitories have been filled.
3. The individual is married and plans to live with his family within a commuting distance.

Any student who is employed in an institutional department where meals are served regularly or where prepared food is sold will not be permitted to enroll as a day student or roomer.

Students wishing to serve as agents for business firms or to operate a business for themselves are required to secure permission from the Director of Student life.

When the administration finds that a student cannot adjust himself to the life of the College, and when the student's conduct appears to be unsatisfactory, the officers of the College may request his withdrawal.

The continuance of each student upon the rolls of the College, the receipt by him of academic credit, his graduation, or the conferring of any degree or the granting of any certificate, are strictly subject to the disciplinary powers of the College. The disciplinary authority of the College is vested in the President. It is the perrogative to act alone or delegate his authority to other personnel of the College.

No student shall have in his possession any motor vehicle kept on or near the campus or in any adjacent town without the prior approval and permission of the Administrative Head of the College. Violation of this regulation subjects the student to immediate dismissal from the institution.

Hazing is prohibited by law in State educational institutions of Texas. The law provides that: "Any student of any State educational institution of Texas who commits the offense of hazing shall be fined not less than $25.00 nor more than $250.00 or shall be confined not less than ten days nor more than three months, or both."

BAGGAGE ARRANGEMENTS

Students are sent certain registration materials prior to being enrolled in the institution. Included in these materials are two baggage tags. These tags are to be filled out with the proper forwarding and return addresses, then attached to baggage brought or shipped to the College. This tag will serve to identify baggage when it arrives at the College, and will aid in delivery of the baggage to the dormitory.

The claim check which is supplied by the hometown ticket agent for shipped baggage should be surrendered to the Maintenance Department here at the College in order for the department to deliver baggage to the dormitory. A fee for delivery of baggage is required by the Maintenance Department and this fee is paid only to the department at the time the baggage check is given up.

Arrangements for delivery of all baggage shipped to the College should be made at the Maintenance Department Office, and should be made as soon after arrival on the campus as is practical, to insure prompt delivery of baggage to the dormitory.

AUTOMOBILE REGISTRATION

All students and employees who drive automobiles on the campus must have them registered in the Office of the Dean of Men, Administration Building, within 48 hours of the time they are brought on the campus.

FEES FOR ALL STUDENTS

(These fees are subject to change without notice)

Payments for student accounts should be made by *cashier's check or money order* payable to the Prairie View Agricultural and Mechanical College of Texas and should be sent directly to the student. All checks, money orders and drafts are accepted subject to final payment. Charge due on such items, usually not exceeding $20.00, will be given to the student unless otherwise instructed.

PERSONAL CHECKS ARE NOT ACCEPTABLE

Maintenance fees are due and payable on the first day of each month. A delinquent fee of $1.00 plus tax, usually two cents (.02), is assessed each student whose obligations to the College are not completely settled before the close of business on the tenth of the month, and he will be required to withdraw if settlement is not made by the fifteenth of the month.

STUDENT FEES

The following student fees are hereby approved (effective September 1, 1965) to remain in effect until changed by order of the Board of Directors, and all fees in conflict herewith are hereby cancelled:

TUITION AND OTHER FEES

Regular Session

Resident Students, for 12 or more semester hours.....$ 50.00 per semester
(For less than 12 semester hours a reduction of $4.00 per semester hour with a minimum of $15.00 per semester)
For registration in absentia (but for no courses)....$ 15.00 per semester

Non-resident students, for 12 or more semester hours.....$200.00 per semester
(For less than 12 semester hours a reduction of $16.00 per semester hour)
Penalty for failure to pay the proper fee at the beginning of each semester shall be.....$ 5.00
For registration in absentia (but for no courses)....$ 17.50 per semester

Summer Session

Resident students, for 4 or more term hours.....$ 25.00 per term
(For less than 4 term hours a reduction of $4.00 per term hour with a minimum of $15.00 per term)
For registration in absentia (but for no courses).....$ 15.00 per term

Non-resident student, for 4 or more term hours.....$100.00 per term
(For less than 4 term hours, a reduction of $25.00 per term hour)
For registration in absentia (but for no courses).....$ 17.50 per term

Audit Fee.....$ 10.00

Late Registration

Old students, both resident and non-resident who in either semester or term do not register on the days set apart for that purpose, shall pay an additional tuition fee of $1.00 per day each day of late registration, with a maximum of $5.00.

September 9-11 is the registration period for the first semester, 1965-66, January 25-27 is registration period for the second semester, 1965-66.

Degree, Certificates, Etc.

College Diploma Fee.....$ 5.00
Graduate School Diploma and Graduation Fee.....$10.00
Transcript Fee (per copy after first copy).....$ 1.00
Trade Certificate Fee.....$ 3.00
Entrance Examination Fee for students from non-accredited high schools.....$ .50
Deficiency Examination Fee per course.....$ 1.00
(Deficiency Grades are I and K)
(Student Nurses should expect expenses involving the following, and in addition to the cost of uniforms.)
State Board Examination
Picture for State Board
Photostat Copy of Records

Extension Courses

Extension Courses Fee, $10.00 per semester hour.

Laboratory Fees

Some courses require a laboratory fee. Laboratory courses and the fee for each is listed in the catalogue after each course description and in the class schedule. Payment is required before students class schedule is approved.

Student Property Deposit.....$10.00

This fee is refundable **not earlier** than ten days after graduation or withdrawal, and after certification by the Registrar. It is for possible losses, damages, and breakage during the enrollment of the student.

Student Service Fee (Required)

The services covered by this fee are subscription to **The Panther** (student publication), membership in the Y.M.C.A. or Y.W.C.A., admission to campus athletic contests, debating contests, dramatics, general student activities, provision of orchestra music for approved entertainment, student union maintenance fee and treatment at the College Hospital except surgery, special drugs and certain X-rays.

Student Service Fee (Required)

Student Service Fee Per Semester $24.25
Student Service Fee Per Term .....$ 8.75
Year Book Fee (Added to Student Service Fee once each regular session—$29.25).....$ 5.00

Music Fees

Regular Session

Piano or voice (2 lessons per week) per semester ..... $ 12.00
Organ ..... $ 5.00
Other instruments, same as piano.

Maintenance Fee

Regular Session

Room Rent, per semester:
New Dormitories $135.00
Old Dormitories ..... $ 90.00
Board, laundry and state tax, per month ..... $ 41.72
(Board $36.00, laundry $5.00, tax $.72)

Laundry per semester

Graduate students, (Roomers), pay for laundry at the time of payment of room rent for the semester.
1st Semester, 1965-66 ..... $ 20.60
2nd Semester, 1965-66 ..... $ 22.00

Summer Session

Old dormitory room rent, board, laundry and state tax, per term of 6 weeks (Room rent $30,00, board $59.65, laundry $7.50, tax $1.20) ..... $ 98.35
New dormitory room rent, board, laundry and state tax, per term of 6 weeks (Room rent $45.00, board $59.65, laundry $7.50, tax $1.20) $113.35

Graduate students only—room rent for Summer Session

Old Dormitories:
Per Term of six weeks ..... $ 37.50
Per Term of three weeks ..... $ 18.75
Per Term of one week ..... $ 6.25

New Dormitories:
Per Term of six weeks ..... $ 52.50
Per Term of three weeks ..... $ 26.25
Per Term of one week ..... $ 8.75

Room Key Deposit, (Full amount returnable if receipt is presented at the Cashier's Windows) ..... $ 1.00

REFUNDS

For all Colleges and Universities of The Texas A&M University System

Tuition

Any student withdrawing officially (a) during the first week of class work in a semester will receive a refund of four-fifths of the tuition fee; (b) during the second week of class work, three-fifths; (c) during the third week of class work, two-fifths; (d) during the fourth week of class work, one-fifth; (e) after the fourth week of class work, nothing; during the first week of class work in a summer term, one-half; after the first week of class work in a summer term, nothing. No refunds will be made until ten days have elapsed from the time the fees were paid.

Student Property Deposit Funds

Student Property Deposits are subject to forfeit and will become permamently a part of the Student Property Deposit Scholarship Fund if not called for within 4 years of the student's last attendance.

Maintenance

No deductions will be made from charges for board, laundry, and room rent in case of entrance within ten days after the opening of a semester, nor will a refund be made in case of withdrawal during the last ten days of a semester or the last ten days for which payment is made.

Except as aforesaid, charges for board, laundry and room rent will be refunded pro rata in case of withdrawal during a semester.

Laboratory Fees

(1) Any student withdrawing from a laboratory course during the first week of class work during any fall or spring semester shall be entitled to a 100% refund.

(2) Any student withdrawing from a laboratory course during the first two days of a summer term shall be entitled to a 100% refund.

(3) Any student withdrawing from a laboratory course after the days specified in (1) and (2), above, shall not be entitled to a refund.

Students Called to Active Duty Involuntarily

Any student involuntarily called to active duty with the Armed Services within the first four weeks of classwork of a regular semester, or within the first week of classwork of a summer term, shall be entitled to a 100% refund of the tuition fee, laboratory fees, student service fee, student activity fee, building use fees, and parking fees. Any student involuntarily called to active duty with the Armed Services after the first four weeks of classwork of a regular semester or after the first week of classwork of a summer term shall be entitled to a refund, on a daily prorated basis, of tuition and laboratory fees. Room, board, and laundry fees shall be refunded on a daily prorated basis. No refunds will be made until 10 days have elasped from the time the fees were paid.

Student Service Fee

A student may claim a refund of the Student Service Fee in accordance with the following schedule:

(1) Any student withdrawing during the first week of classwork during any fall or spring semester shall be entitled to a 100% refund.

(2) Any student withdrawing during the first two days of a summer term shall be entitled to a 100% refund.

(3) Students withdrawing after the dates specified in (1) and (2) above shall not be entitled to a refund.

EXPENSES AND FEES FOR 1965-66

(These fees are subject to change without notice)

	Old Dormitories	New Dormitories
FIRST SEMESTER, September 8, 1965		
Tuition (Non-residents pay $200.00)	$ 50.00	$ 50.00
Student Service Fee (Required)	29.95	29.95
Room Rent-First Semester	90.00	135.00
Board and Laundry (September, 1965) Tax Tax included $.80	46.00	46.00
	$215.25	$260.25

	Old Dormitories	*New Dormitories*
Student Property Deposit (Required of Students who do not have the $10.00 on deposit)	10.00	10.00
Total Entrance Fees[1]	$225.25	$270.25
Board and Laundry—October 1 (Tax included $.72)	41.72	41.72
Board and Laundry—November 1 (Tax included $.72)	41.72	41.72
Board and Laundry—December 1 (Tax included $.70)	40.50	40.50
Fees through January 23, 1966		
Total Fees for First Semester	$349.19	$394.19
Books and Supplies[1]* — (Estimated— $50.00 to $90.00)	50.00	50.00
Total Estimated Expenses — First Semester	$399.19	$444.19
SECOND SEMESTER, January 24, 1966		
Tuition (Non-residents pay $200.00)	$ 50.00	$ 50.00
Student Service Fee (Required)	24.25	24.25
Room Rent — Second Semester	90.00	135.00
Board and Laundry (January, 1966) Tax included $1.10	65.90	65.90
	$230.15	$275.15
Student Property Deposit (Required of Students who do not have the $10.00 on deposit)	10.00	10.00
Student Service Fee $29.25, (if not enrolled First Semester)	5.00	5.00
Total Entrance Fees[1]	$245.15	$290.15
Board and Laundry—March 1 (Tax included $.72)	41.72	41.72
Board and Laundry—April 1 (Tax included $.72)	41.72	41.72
Board and Laundry—May 1 (Tax included $.43)	25.63	25.63
Fees through May 28, 1966		
Total Fees for Second Semester	$354.22	$399.22
Books and Supplies[1]* — (Estimated— $50.00 to $90.00)	50.00	50.00
Total Estimated Expenses— Second Semester	$404.22	$449.22
Room Key Deposit, returnable. (Pay upon arrival to Dean of Men or Dean of Women)	$ 1.00	$ 1.00
Automobile Registration Fee	$ 1.50	$ 1.50

Non-resident Student Registration Fees

In accordance with the regulations of our governing board, the following definitions, general policies and regulations will apply to non-resident students. Any variance therefrom will depend upon the facts in the individual case and the interpretations placed thereon by the admissions officer.

A. For each student who registers for four (4) or more hours in a Summer Term (of six weeks); $100.00 with a reduction of $25.00 (minimum $25.00) for each semester hour of maximum registration less than four.

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[1]World War II Veterans attending under benefits of G. I. Bill have tuition and books paid for by Veterans Administration. Korean Veterans (PL-550) must secure authorization for enrollment from the Veterans Administration prior to registration and must come prepared to pay all fees indicated above.

*Estimate is for students other than Engineering and Industrial Education. First year students in these courses should estimate their books and supplies between $70.00 and $90.00.

B. For each student who registers for (12) or more hours in a semester of the long Session, $200.00 with a reduction of $16.00 (minimum $16.00) for each semester hour of maximum registration less than twelve.

C. For registration in absentia in any semester (but for no courses), $17.50. For registration in absentia in any term (but for no courses) $17.50.

D. The residence status of a student is determined at the time of his first registration in the College and his residence is not changed by his sojourn at the College as a student except as provided by law. This policy shall apply to both graduate and undergraduate students regardless of any scholarship, student assistantship, or graduate assistantship that may be granted to any student.

E. Pursuant to the authority granted by the Fiftieth Legislature in Chapter 218, General and Special Laws (House Bill 507) the Board of Directors hereby adopts the following non-resident regulations:

1. A non-resident student is hereby defined to be a student of less than twenty-one (21) years of age, living away from the family and whose family resides in another State, or whose family has not resided in Texas for the twelve (12) months immediately preceding the date of registration; or a student of twenty-one (21) years of age or over who resides out of the State or who has not been a resident of the State twelve (12) months subsequent to his twenty-first birthday or for the twelve (12) months immediately preceding the date of registration.

2. The term "residence" means "legal residence" or "domicile," and the term "resided in" means "domiciled in."

3. The legal residence of one who is under twenty-one (21) years of age is that of the father. Upon death of the father, the legal residence of the minor is that of the mother. Upon divorce of the parents, the residence of the minor is determined by the legal residence of the person to whom custody is granted by the court. In the absence of any grant of custody, the residence of the father continues to control. Upon death of both parents the legal residence of the minor continues to be that of the last surviving parents until he becomes twenty-one (21) years of age unless he makes his home with his grandparents, whereupon their residence is controlling.

4. A student under twenty-one (21) years of age shall not be classified as a resident student until his parents shall have maintained legal residence in this State for at least twelve (12) months. A residence in another State shall be classified as a non-resident student. It shall be the responsibility and duty of the student to submit legal evidence of any change of residence.

5. All individuals who have come from without the State of Texas and who are within the State primarily for educational purposes are classified as non-residents. Registration in an educational institution in the State is evidence that residence is primarily for educational purposes even though such individuals may have become qualified voters, have become legal wards, of residents of Texas, have been adopted by residents of Texas, or otherwise attempted to establish a legal residence within the State.

6. A student twenty-one (21) years or older who comes from without the State and desires to establish a status as resident student must be a resident of the State for a period of at least twelve (12) months other than as a student in an educational institution and must have the intention of establishing a permanent residence within the State during that entire period.

7. The residence of a wife is that of her husband; therefore, a woman resident of Texas who marries a non-resident shall be classified as a non-resident and shall pay the non-resident fee for all semesters subsequent to her marriage. A non-resident woman student who marries a resident of Texas is entitled to be classified immediately as a resident student and is entitled to pay the resident fee for all subsequent semesters.

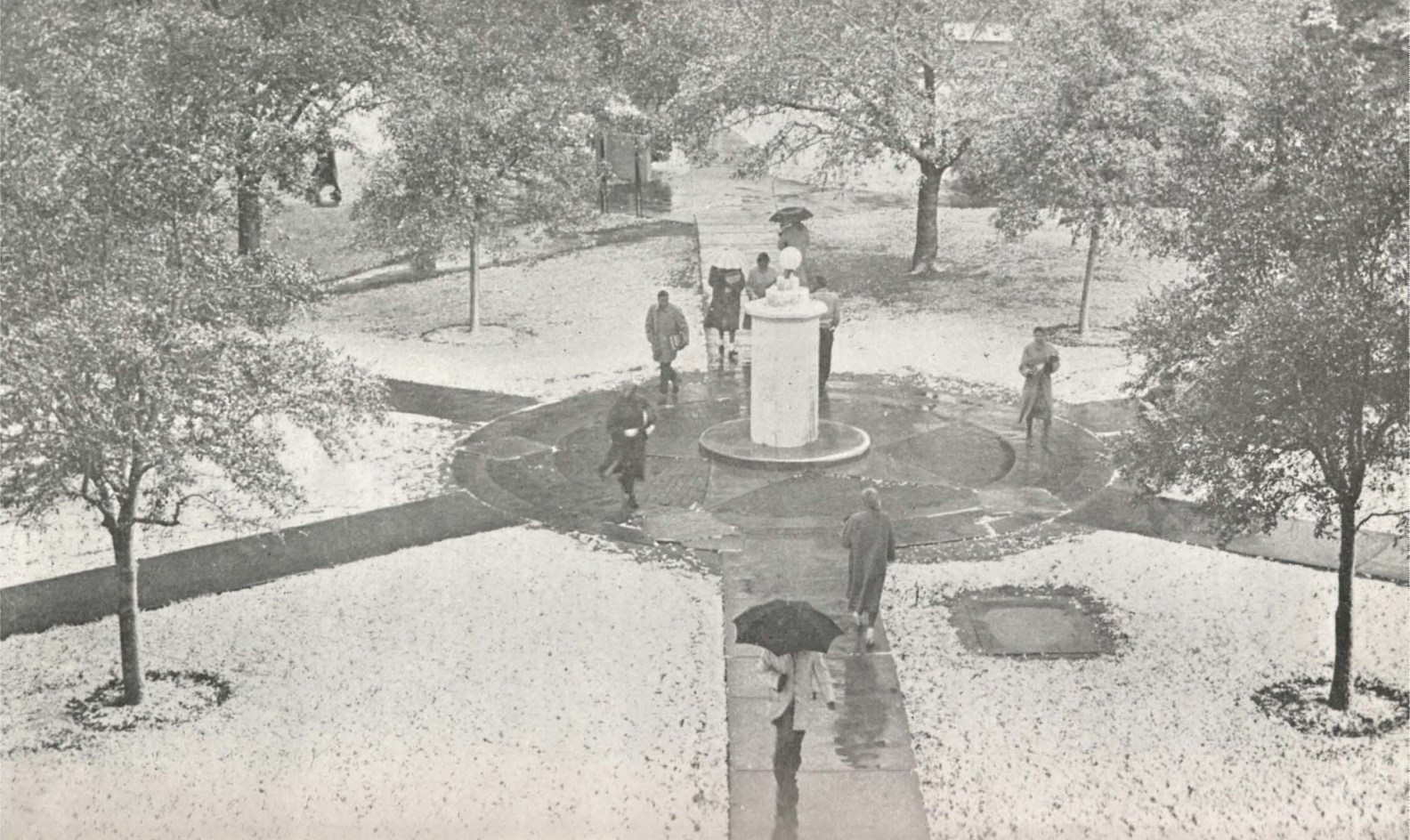
8. All aliens shall be classified as non-resident students except that an alien who has applied for naturalization in the United States and has received his first citizenship papers shall have the same privilege of qualifying as a resident student as a citizen of the United States. The twelve (12) months' residence required to establish the status of a resident student shall not begin until after such first citizenship papers have been issued to the alien.

9. Members of the Army, Air Corps, Navy or Marine Corps of the United States who are stationed in Texas on active duty shall be permitted to enroll their children by paying the tuition fees and charges provided for resident students without regard to the length of time such member of the Armed Services shall have been stationed on active duty within the State. This provision shall extend only during active military service in Texas, and upon such member of the Armed Service being transferred out of the State of Texas, his children shall be classified as to residence under Section One (1) of these regulations. Any student claiming the privilege of this section shall submit at each registration a statement by the commanding officer of the post or station at which his parent is on active duty verifying the fact of his parent's military status.

10. Appointment as a member of the teaching or research staff or the holding of a fellowship, scholarship, or assistantship shall not affect the student's residence status or the tuition fee to be paid.

11. It shall be the responsibility of the student to pay the correct fee at the beginning of each semester or term for which he may register, and a penalty of five dollars ($5.00) shall be assessed for failure to pay the proper fee.

F. Members of the Armed Forces who were bona fide residents of the State of Texas when they entered the service and who have been temporarily assigned elsewhere by the United States Government shall be considered residents of Texas and their minor children shall not be required to pay the non-resident fees set forth above.



Academic Information

ADMISSION

General Admission Requirements

All communications in regard to admission to the College should be addressed to the Registrar, Prairie View A. and M. College, Prairie View, Texas.

All applicants for admission to the College must be of good moral character and must pass a satisfactory physical examination administered by the family physician. The school reserves the right to admit or reject any applicant. Any applicant who makes false statements or claims in order to gain admission forfeits his privilege of admission or privilege to continue in the college if already admitted on the basis of false data.

Admission by Certificate

Applicants who present complete certified transcripts showing graduation from accredited four-year high schools with a minimum of fifteen units of work will be admitted without examination. From a secondary school which is organized with separate junior high school and three years senior high school, twelve units done in the upper three years of high school will satisfy the entrance requirements; the other three units may be accepted **en bloc** from the junior high school work.

A unit is the equivalent of one high school study satisfactorily pursued during one school year, thirty-six weeks length, on the basis of five forty-five minute recitations a week. In laboratory courses three recitation periods and two double periods of laboratory work per week constitute a unit.

Of the units acceptable for admission from high school, eight are required while seven are electives. The following represents the distribution of required units:

English	3 units
Algebra	1 unit
Plane Geometry	1 unit
History and Civics	2 units
Natural Science(with laboratory)	1 unit

In order to pursue the courses leading to a Degree in Industrial Education or to a Technical Certificate, the student must satisfy the same entrance requirements as are prescribed for entrance to freshman college courses. The entrance requirements for admission to Engineering courses are as follows:

Social Science	2 units	Algebra	1 ½* units
Solid Geometry	½** unit	English	3 units
Natural Science (with laboratory)	1 unit	Plane Geometry	1 unit

The seven elective units may be earned in any subject or subjects accredited by the Department of Education of the state in which the high school is located, provided that the total number of required and elective units together in any one subject shall not exceed four units.

All credit for admission must be filed and classified in the Registrar's Office before the student may attain academic status of any kind. Transcripts should be on file in Registrar's Office at least one month before the registration date of the semester in which the applicant plans to register.

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*Students having only 1 unit in Algebra will be required to take a five-hour course in College Algebra.

**Students without the credit will take Solid Geometry first semester, which will add three credit hours to requirements for graduation.

WINTER SCENE at busy pedestrian intersection in heart of Campus — Abner Davis Monument named in honor of deceased Prairie View Athletic hero.

At the request of the applicant, a blank for this purpose will be sent by the Registrar to the principal of the high school from which the applicant was graduated.

If the student lacks some of the above requirements, he must make up the deficiencies.

All students must have taken the American College Testing Program examinations (ACT) prior to registering for classes. The American College Tests are given in November, February, April and June. Since there in no advantage to the student in waiting until a later date to take the tests, students who seriously seek admission to Prairie View are urged to take these tests at one of the earliest dates so that scores may reach Prairie View before the student graduates from high school.

Students entering to major in Applied Music (piano, voice, and violin) should show evidence of satisfactory elementary training and technique. Those who do not meet entrance requirements in Applied Music will study without credit until work and development are acceptable.

Admission by Examination

Any or all of the unit requirements for admission may be met by passing entrance examinations.

Spring entrance examinations are held throughout the State in May under supervision of the Texas Education Agency, mainly for the convenience of students in non-accredited high schools who wish to satisfy college entrance requirements.

Fall entrance examinations will be given at Prairie View A. and M. College during the Freshman orientation for graduates of four-year non-accredited high schools who wish to qualify for admission.

Entrance examinations will be administered between May and September at home, upon approval of such arrangements by the Registrar, Prairie View A. and M. College, Prairie View, Texas. These arrangements should be made through the principal or the superintendent of the high school from which the applicant was graduated.

Admission to Advanced Standing

A student transferring from another college will be admitted to advanced standing upon presentation of evidence showing honorable dismissal and an official transcript of all work completed at the other institution.

Work completed at institutions which maintain standards of admission and graduation similar to those of this college will be given equivalent credit so far as it applies to courses offered in this college and has been completed with a grade of "C" or better.

Since all credits given by transfer are provisional, final acceptance will depend upon the maintenance of satisfactory standing by the student during the first semester of his attendance. In addition all transfer students must meet residence requirements of this college.

Credit for undergraduate courses in extension and/or correspondence in the major subject or for the requirements for the baccalaureatee degree shall be limited to one-fourth of the total credit hours required. Transfer credit will be allowed only for extension and/or correspondence courses meeting the above qualifications.

Students applying for advanced standing in music courses leading to a degree must show evidence of satisfactory completion of courses equivalent to those outlined in the music curriculum of the College and must pass acceptably an examination in applied music. Standing in music courses will be determined in consultation with the head of the Music Department.

Admission by Individual Approval

Applicants for admission who are over 21 years of age may be admitted to college courses without examinations. Such persons must show evidence that they have substantially completed the work represented by the number of admission units required of other applicants and have sufficient ability and seriousness of purpose to do the work desired with profit to themselves and satisfaction to the College. Inability or failure to do the work shall be sufficient cause for withdrawal of such classification.

Students thus admitted may not receive credit toward a certificate or a degree until the eight required and seven elective admission units are absolved. These units may be absolved as follows: Upon completion of Freshman English three admission units are granted; two units in mathematics are granted upon completion of Freshman mathematics; two units in history and civics are granted for completion of Freshman social science; one unit in science is granted for completion of Freshman science. Any or all of these admission units may be absolved by examination. The remaining seven electives admission units may be granted upon completion of 30 semester hours of college work provided the average is no lower than "C."

Admission as Irregular Student

Applicants at least 16 years of age who have completed scholastic training equivalent to completion of the elementary grades may be permitted to restrict their studies to special courses upon petition to the Registration Committee and the Dean of the School in which the work is to be pursued.

Special Admission Requirements for Veterans

Under certain circumstances, veterans who have not completed high school may enter the College on individual approval. After successfuly completing the Freshman year, the high school credits can be liquidated through appropriate examinations.

Prairie View A. and M. College normally admits high school graduates upon the recommendation of their high school principals. They must have fifteen units of high school work. Veterans may be admitted on indivdual approval even though they do not have fifteen units of high school work. Those admitted must complete the first year's work in college and pass the prescribed examinations to validate the high school credit.

Veterans' Eligibility

If there is any doubt as to status as a veteran student, inquiry should be made to the nearest Veterans Administration office or to the College's Veterans Counselor.

If eligibility matters are determined before registration, both the registration and allotments will be expedited.

Korean veterans planning to attend school under the provisions of the Korean G.I. Bill should secure their own authorizations from the Veterans Administration or bring their VA Forms and be prepared to pay their own fees. After registration, veterans should have enrollment certification papers prepared and forwarded to the V.A. Office by the Office of Veterans' Affairs on the campus.

Counseling Service

Prairie View, both as an institution and within its schools, recognizes the value of competent guidance and counseling of students in education, vocational, and individual matters. To provide for better educational aims,

and to the extent to which the individual is making satisfactory adjustment to his difficulties and responsibilities, the Counseling Center, faculty advisors, and deans of students work jointly for maximum benefit of the student. Through the Counseling Center, the student is assisted in dealing with problems of vocational choice, progressing toward his own educational goals and working out personal and emotional problems. Any student who desires may make use of the facilities of the Counseling Center.

SCHOLASTIC REGULATIONS

Unit of Credit

The unit of credit at Prairie View A. and M. is the semester hour. A semester hour represents the equivalent of one recitation or lecture hour per week for eighteen (18) weeks. Two laboratory, practice or demonstration hours represent the equivalent of one recitation or lecture per week of eighteen (18) weeks except that in the School of Engineering, and the School of Industrial Education and Technology, and Military Science three practice or laboratory hours are required to equal one lecture or recitation hour.

Explanation of Course Numbers

The first digit reading from the left indicates the level on which a course is offered, as freshman—1, sophomore—2, junior—3, senior—4. The second digit indicates tne semester; odd numbers indicate the first semester and even numbers, except zero, indicate second semester; zero indicates either semester. The third digit specifies the semester hours of credit a course carries.

Numbers in parenthesis indicate the clock hours per week spent in lecture and laboratory respectively. Roman numerals, when used, I and II indicate first and second semesters respectively.

Example: CHEMISTRY 114 (Chem 114 Inorganic) (2-4) I. This means that the course is on the freshman level, that this is the first semester of the course, that is carries four semester hours credit. The abbreviations enclosed in parenthesis are used with key punch equipment in posting the grades on transcripts and grade reports. The numerals enclosed indicate that the course requires two clock hours for lecture and four clock hours for laboratory periods per week. The Roman numeral indicates it is being offered the first semester of the current school year.

Classification

Students who have credit for thirty semester hours are classified as sophomores; those having sixty semester hours are classified as juniors; and those having ninety semester hours are classified a seniors.

CLASS ATTENDANCE

It is each student's responsibility to attend regularly and punctually each class and laboratory exercise in each course. The student should arrange with the teacher in advance for a necessary absence, or explain it immediately on return. The instructor's daily record constitutes the official account of the student's attendance. The administration holds the instructor responsible for an accurate, complete, and clearly comprenhensible record of each student's attendance.

Absences from class without good cause may result in a grade of "F" (failure) being automatically recorded for the course. Each student reported for having accumulated enough absences to affect adversely his work will be required to explain his excessive absences and will be dealt with as the individual case may require.

Change of Program

After completing the initial procedure of registration for the session, a student may add or drop a course only with the approval of the Dean of the School. No course may be added after the tenth working day of any semester. The total number of hours must not become fewer than fourteen. A student who drops a course after the first ten days of either semester for any cause other than withdrawal from the College is given, at the dis-

cretion of the Dean, a grade of "F" in the course for the semester. To drop a course unofficially (and the persistent absence from class amounts to dropping) means to sever one's connection with the College.

Minimum Load. Every student enrolled in the College will be expected to carry a minimum load of fourteen semester hours. Students who wish to carry less than fourteen semester hours must have the approval of the Dean of Instruction.

Repetition of Courses. If a student repeats a course his official grade is the last one earned.

Extra Load

Any credit course taken in addition to a program of 17 semester hours constitutes an extra load in the School of Arts and Sciences, and 18 semester hours in the other Schools. To carry an extra load the student must obtain written permission from the Classification Committee. Permission to carry an extra load may be granted to students maintaining a scholastic average of "B" or above during the last previous semester or term in residence. The maximum load will not exceed 18 semester hours for the School of Arts and Sciences; 19 hours in all other Schools.

Official Withdrawal from College

A student who finds it necessary to withdraw from school must make such withdrawal through the Office of the Dean of Men or Dean of Women. Otherwise he receives failing grades in all courses.

Symbols of Grading

The grading symbols are: A (95-100); B (85-94); C (75-84); D (65-74); F (below 65), also withdrew unofficially or withdrew while earning a grade "D" or below; I-Incomplete; W-Withdrew officially before the change of program period or during the term or semester while earning a grade of "C" or above.

A grade of "I" means that some relatively small part of the session's work remains undone because of illness or other unavoidable reason. A grade of "I" may become a passing grade upon completion of the work prescribed by the instructor. (See section on Incomplete Classwork.)

"F" is failing grade. Credit for a course in which the grade of "F" is given can be secured only by repeating the course.

Incomplete Class Work

A student who is compelled to delay beyond the end of the semester the completion of the class work of the semester for illness or other imperative causes, should, in person, or through a friend, petition the Dean of the School in which he or she is registered—beforehand, if possible—for permision to delay the work. If permission is granted, the work must be finished *within a year* and credit for it given at the discretion of the instructor. A student whose work is reported incomplete without the Dean's permission is given a failing grade.

The student must make application to the Registrar for a permit to remove a grade of "I" *within a year after the grade is incurred.*

Correction or Change of Grades

Any change, or correction, of a grade recorded for a student must be made within the next semester or term of the student's enrollment. In the case of a student who drops out for one semester, or more, no period greater than two years will apply.

Grade Points (Effective September 1, 1956)

For a grade of "A" in any subject, four times as many grade points will be given as there are credit hours in the course; for a grade of "B," three times as many points; for a grade of "C," twice as many points; and for a grade of "D," the same number of points. No other grades yield grade points. Grade points are required for graduation in the ratio of two

grade points for each semester hour in residence counted toward graduation. The grade point average is the quotient of total grade points divided by total semester hours earned.

Honor Roll

The College honor roll is published at the end of each semester of the regular session. To qualify for the honor roll a student must have carried a semester hour load of at least 14 hours and made an average of "B" and no grade below "C" in any course.

FAILING TO PASS—PROBATION

1. Any student who fails in 50 per cent or more of his semester hour registration any semester is automatically subject of being dropped from the institution.
2. Freshman failing in less than 50 per cent of their semester hour registration must show a minimum of 1.5 (D-plus) grade points for each semester hour passed or be subject to dismissal.
3. Freshmen with no failures but who have grade point averages of less than 1.5 of each semester hour registration are placed on probation and, if the grade point average is not met (see 4) the succeeding semester, are subject to dismissal.
4. In order to be eligible for re-admission any semester without special permission a student must be able to meet the following requirements in addition to 1, 2 and 3 above: At the end of each semester freshmen students must have a grade point total equal to 50 per cent more than total number of semester hour registration; sophomore students must have 75 per cent more; and junior students must have 87 per cent more.
5. Students who do not meet the grade point requirements (in 4) may be admitted for one semester on probation upon the recommendation of the Dean of the School and approval of the Registration and Classification Committee. If at the end of the semester the student has not met the grade point requirement, such student is automatically dropped.

Grade Reports From the Registrar

The College's responsibility for the maintenance of student records in no way relieves each student of his inidividual responsibility for keeping up with his own standing in his particular program of study. Courses, grades, semester hours, and/or grade points are available to each student from the Registrar's Office on the completion of each semester or term. In case an error is made in the maintenance and reporting of a student's record the student will be held responsible for meeting the requirements as published in the catalogue.

The parents or guardians of all students failing in 50% or more of their semester hour load are notified of this condition shortly after the results of the mid-semester tests have been reported to the Registrar's Office.

EXAMINATION AND TESTS

Semester Examinations

Examinations in all college courses are given at the end of the first and second semesters. Exceptions from examinations will not be granted. In all examinations, account is taken of English usage.

Mid-semester Tests

Intra-semester tests in all college courses are given at the end of the first nine-week period of each semester.

Absence from Examinations

A student who is compelled to be absent from a semester examination for sickness or other imperative cause should petition his Dean—beforehand, if possible—for permission to postpone the examination. This permission must be presented in writing to the teacher who is to give the examination and submitted by the teacher with the grade to the Registrar's Office.

A student absent from a semester examination without the Dean's permission is graded "F" and required to repeat the semester's work.

MEN CALLED TO THE ARMED SERVICES

Re: Academic Credit

Seniors who are in their last semester and are taking all the work for graduation are allowed their credits at the time they are called, provided it is past mid-semester, nine weeks.

Other students are allowed their grades up to the time of leaving if they are called as follows:

a) If two weeks after mid-semester, eleven weeks, their "A," "B," and "C" grades.
b) If after January 1 or May 1, their "A," "B," and "C" grades.
c) "D" grades are allowed only when semester is completed.

In each case the student is expected to stay in college as long as possible before he goes to enter the Army. This is considered to be one week before his actual date of reporting.

A student who leaves earlier than the dates indicated above may be granted permission to take up his studies at a corresponding time in a later semester if he can come back. If he is out a considerable length of time, he should return earlier in order that the first part of the semester work should be fresh in his mind when he comes to the latter part.

DEGREES AND CERTIFICATES

Applying for Graduation

Any student expecting to graduate at the end of a regular long session is required to file application for the degree or certificate of proficiency expected by October 15th, on a blank available in the Registrar's Office. If graduation is expected at the end of the First semester, the application for degree or certificate of proficiency should be made by March 15th of the year preceding the date of graduation. Those who expect to graduate at the close of the Summer Session, must file application for the degree or certificate of proficiency by March 15th.

If a candidacy is postponed, the application for graduation must be renewed during a corresponding period in any later semester or summer session in which the student expects to receive his degree.

Degrees Offered

1. From the School of Agriculture, Bachelor of Science.
2. From the School of Arts and Sciences, Bachelor of Arts, Bachelor of Science, and Bachelor of Science in Education.
3. From the School of Home Economics, Bachelor of Science.
4. From the School of Nursing, Bachelor of Science.
5. From the School of Engineering, Bachelor of Science.
6. From the School of Industrial Education and Technology, Bachelor of Science, and Associate of Science.
7. From the Graduate School, Master of Science, Master of Arts, and Master of Education.

No degree will be conferred except publicly on Commencement Day except January graduates, for which there is no commencement exercise. Every candidate must attend in person, in academic attire, the Commencement at which his degree is to be conferred. If he must be absent for a good cause, he must petition the President at least one week in advance.

Requirement for Degrees and Certificates

Semester Hour and Grade Point Requirements. To qualify for any degree a student must satisfy the specific course hour and grade point requirements listed for the School in which he is enrolled. Two grade points for each semester hour presented in residence for graduation is required for all candidates for degrees and certificates.

Repetition of Courses. If a student repeats a course, his official grade is the last one earned.

Special Requirements in Major Subject. Of the courses offered for an undergraduate degree at least six semester hours in advanced courses in both the major and minor subjects must be completed in residence.

Credit for undergraduate courses in extension and/or correspondence in the major subject or for the requirements for the baccalaureate degree shall be limited to one-fourth of the total credit hours required. Transfer credit will be allowed only for extension and/or correspondence courses meeting the above qualifications.

General Education Requirement. All students are required to include in all baccalaureate degree plans a minimum of forty-six semester hours from approved areas generally recognized as the general education program. The distribution of these hours is as follows:

English Usage (Eng. 113-123-213)	9 semester hours
Humanities (Eng. 223, Foreign Language, etc.)	3-15 semester hours
Mathematics (113-123 or 173-183)	6 semester hours
Science (113-123 or Biol. 114-124 or Chem. (114-124)	6-8 semester hours
Social Science (Hist. 173-183 plus Pol. Sc. 113-123 plus 3 semester hours of social science elective)	15 semester hours
Non-technical elective	3 semester hours
Physical Education and Military Science (Men) (112-122-212-222)	4-8 semester hours
Total	46-64 semester hours

Time Limit. A student may graduate under the catalog requirements for the year in which he registered in this institution for the first time, provided he completes graduation requirements within a continuous five-year period. If a student interrupts his attendance, or transfers from one school to another, he must graduate under the catalog in effect at the time of his readmission or transfer. Failure to complete the requirements for the degree within five (5) years after the date of initial registration will subject the student to graduation requirements under the regulations effective for the current graduating class. The catalog year shall be considered as beginning with the long session in September. Students entering for the first time in the summer session will be subject to the catalog for the long session immediately following.

Extension Limitation. Of the courses offered for an undergraduate degree, not more than thirty semester hours in correspondence and extension will be accepted.

Credit for undergraduate courses in extension and/or correspondence in the major subject or for the requirements for the baccalaureate degree shall be limited to one-fourth of the total credit hours required. Transfer credit will be allowed only for extension and/or correspondence courses meeting the above qualifications.

Residence Requirement. No degree will be conferred without campus residence equivalent to two semesters comprising thirty-six weeks or three summer sessions comprising thirty-six weeks, and the completion in residence of at least thirty semester hours of work counting toward graduation provided also that the last 30 semester hours of work have been completed in continuous residence.

Six Hours in American History Required. All students seeking an undergraduate degree after July 1, 1956, are required by State Law to complete six semester hours in American History, or three semester hours in American History plus three semester hours in Texas History.

Six Hours in Government Required. The Forty-fifth Legislature passed the following law: "Provided further, that after September 1, 1937, no student shall be certified for graduation from any tax-supported State educational institution with the award of a college degree unless such student shall have completed theretofore in a standard college or university at least six (6) hours of credit in the government of the State of Texas

or of the United States of America, or the equivalent in both or shall have completed at least three (3) hours of said credit in government and at least three (3) hours of credit in a course in Military Science as provided in an approved Senior R.O.T.C. unit."

Student Teaching Requirements. Students in the Teacher Education Program in all schools shall be required to take student teaching before they may be recommended for graduation.

ADMISSION TO AND RETENTION OF STUDENTS IN TEACHER EDUCATION PROGRAMS

I. Admission to Provisional Status.

During the first registration period the freshman or transfer student shall declare his or her intent to enroll in a teacher education program. Criteria for Admission:

1. Satisfactory high school record (upper 50% of class)
2. Must have completed, or enrolled in, all academic foundations requirements
3. No record of criminal convictions
4. Good health
5. Possess no serious impediment that would cause hom or her to be unable to teach effectively
6. Genuine and expresed interest and desire in teaching

II. Admission to Professional Status

Criteria for Admission:

1. Student must have completed at least 45 semester hours
2. Must have overall "C" average
3. Must meet minimum requirements in his teaching fields
4. Good character and good conduct record
5. Good Health
6. Possess no serious impediment that would cause him or her to be unable to teach effectively
7. Genuine and expressed interest and desire in teaching

III. Admission to Candidacy

Criteria for Admission:

1. Must have complied at least 75 semester hours of course work
2. Must have completed, or enrolled in, all academic foundations requirements
3. Must have an overall "C" average, or better
4. Must meet the grade point average as required by his major and minor departments
5. Must have completed, or will complete by the end of semester in which application is made, all courses which are judged to be prerequisite to student teaching
6. Good character and conduct
7. Good Health
8. Possess no serious impediments that would cause him or her to be unable to teach effectively
9. Evidence of genuine interest and desire in teaching

Prerequisites for Student Teaching. The following criteria will be used in determining the eligibility of a student to enroll in student teaching:

1. Complete courses required by the Department or School before student teaching.
2. Maintain not less than a "C" average in the minor field, if scheduled to do student teaching in the minor.
3. Maintain a minimum average of "C" or above, as set up for a selected major field.
4. Satisfactorily complete the approved general education courses, including the twelve semester hours of required English courses.

5. Present evidence of physical fitness from the college medical officer at the time of registration for student teaching.
6. Show evidence of emotional maturity.
7. Give evidence of good moral character, desirable personality traits, professional attitudes, and good conduct record.
8. Show evidence of necessary competencies for specific student teaching assignment.
9. Present evidence of professional laboratory experiences prior to student teaching.

Essay Requirement. Every candidate for the bachelor's degree must write a report or an essay on some practical topic or project in his field of concentration. The report or essay must be typewritten, double-spaced on plain white bond paper, and must be approved by the advisor under whose supervision it has been written, and the Head of the Department. Two copies must be bound at the expense of the student. The original and first carbon must be filed in the Dean's office not later than May first of the academic year in which the degree is to be conferred. Candidates for the degree at the Summer School Commencement must file their reports of essay before August first. January candidates must file their reports on the first day of class following the Christmas holidays.

Basic Military Science Requirement. Completion of two years of Basic Military Science is required for all physically qualified male students who are citizens of the United States, except for veterans, students who are past their 23rd birthday upon initial enrollment, and those who enter with Advanced Standing in excess of sophomore year first semester academic requirements.

Skills Requirement. Candidates for graduation from the School of Agriculture are required to complete special skills before they may be approved for graduation.

Graduation Honors. Eligible candidates for graduation will be designated on commencement programs as follows:

SUMMA CUM LAUDE — Those having attained a quality point ratio of 3.6 to 4.0.

MAGNA CUM LAUDE — Those having attained a quality point ratio of 3.3 to 3.5

CUM LAUDE — Those having attained a quality ratio of 3.0 to 3.2

No student who has made a grade below "D" shall be eligible for consideration for honors regardless of his grade point ratio.

Registration Requirement. Students who are to receive a degree must be enrolled in the institution for the semester or term in which the degree is to be conferred. A minimum fee of $15.00 is required of students who are not enrolled in any classes. Non-resident students also pay $17.50.

Second Baccalaureate Degree Requirement. No second Bachelor's degree will be conferred until the candidate has completed at least thirty semester hours in addition to those counted toward the first Bachelor's degree. The credit subsequent to the first undergraduate degree required for presentation of the second undergraduate degree must be done in residence.

Requirements for Certificate of Proficiency

Certificates of Proficiency are awarded for completion of special trade courses as follows: Automotive Science, Carpentry and Cabinetmaking, Electrical Repair, Food Technology, Dry Cleaning, Machine Shop Estimating, Painting and Decorating, Plumbing and Steamfitting, Printing, Radio and Television, Shoemaking, Tailoring, Welding, Secretarial Science and Dressmaking. For specific requirements of each trade see the school in which the trade is scheduled.

Requirements for Texas Teacher Certificates

All teachers' certificates valid in Texas are issued by the Texas Education Agency, Austin, Texas. Under the revised Teacher Certificate Program, effective September 1955, two types of certificates are provided:

Provisional and *Professional.*

The *Provisional Certificate* ($2.00) is awarded at the bachelors degree level upon satisfactorily completion of an approved Teacher Education Program. The *Professional Certificate* ($3.00) is awarded upon completion of at least thirty (30) semester hours of graduate work beyond the bachelor's degree requirements in an approved graduate Teacher Education Program.

Students in Progress Prior to September 1, 1955

Any undergraduate student who started his college work prior to September 1, 1955, can receive a certificate under the old certification law upon completion of the requirements for a baccalaureate degree.

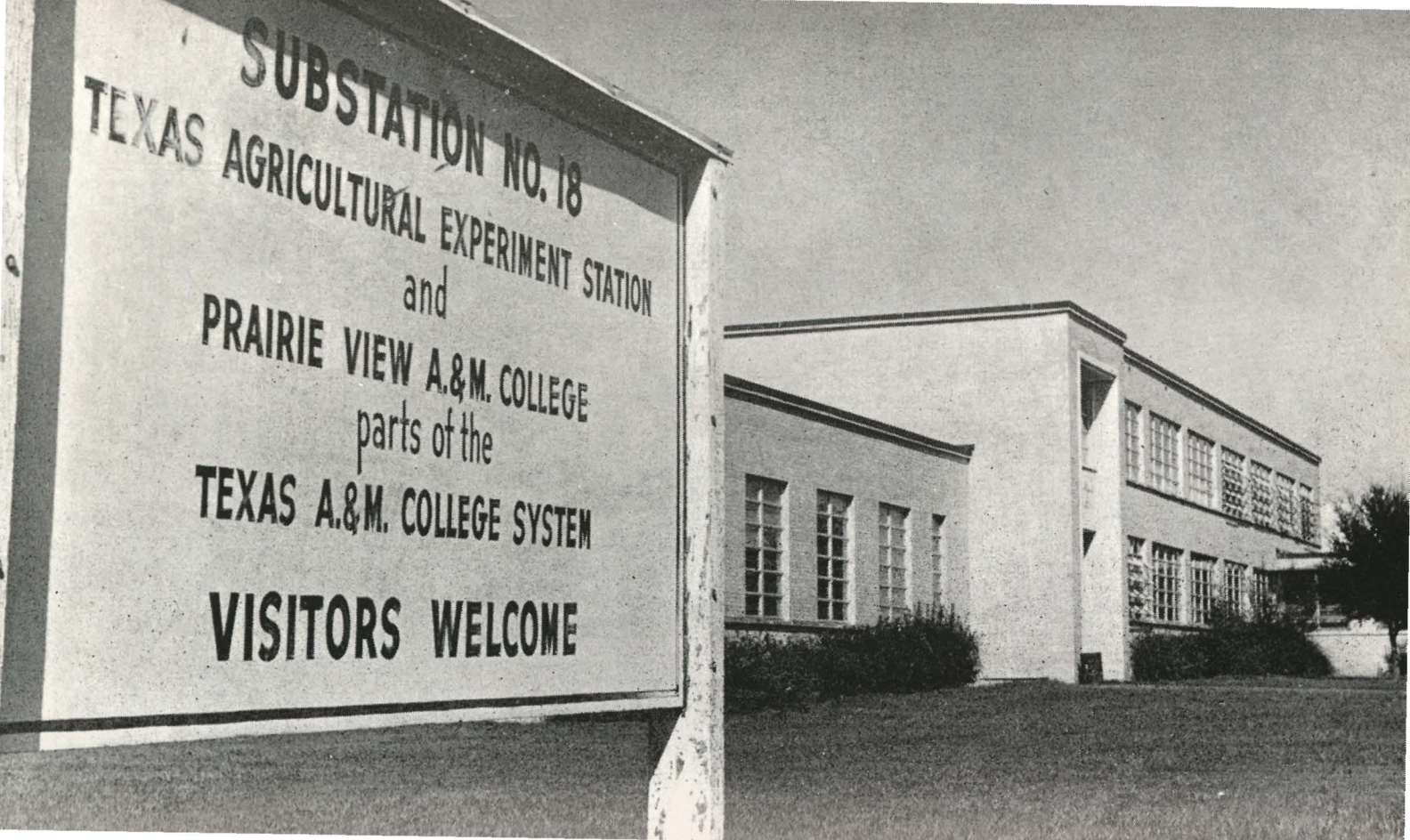
Undergraduate students who completed a minimum of six semester hours in education and a course in Texas and Federal Constitutions prior to September 1, 1955 and who wish to obtain a temporary certificate before completing the requirements for the bachelor's degree should send a transcript to the Texas Education Agency for evaluation.

A person with a bachelor's degree from a Texas college who had completed the required courses in Texas and Federal Constitutions (or six semester hours in American Government) and at least six semester hours in education prior to September 1, 1955 can receive a certificate under the old certification law.

Steps in Obtaining a Certificate for Student in Progress:

1. Complete the program in teacher education which was started prior to September 1, 1955, and obtain the bachelor's degree or complete the additional certificate requirements beyond the bachelor's degree.
2. Meet the other requirements for the type of certificate for which college preparation entitles applicant, using the application form prescribed by the Texas Education Agency. File this application with the Registrar of the institution in which preparation is completed.
3. The institution shall certify:
   a. That the applicant was enrolled in a teacher education program leading to bachelor's degree prior to September 1, 1955.
   b. That the teacher education program has been completed and the bachelor's degree has been conferred, or additional requirements beyond the bachelor's degree have been completed.
   c. That the applicant has completed a course or courses that give special emphasis on the Constitutions of the United States and the State of Texas.
   d. That the applicant has completed at least six semester hours in American History, or three semester hours of American History plus three semester hours of Texas History. Persons completing a program of teacher education prior to July 1, 1965, are exempt from this requirement,
4. Payment of fee of $2.00 (money order payable to Texas Education Agency). Fee is not required for a certificate of approval.

A person who holds a bachelor's degree from an out-of-state institution is expected to meet the requirements of the new certification program. Applications should be sent to the Director of Teacher Relations, Texas Education Agency, Austin, Texas.


SUBSTATION NO. 18
TEXAS AGRICULTURAL EXPERIMENT STATION
and
PRAIRIE VIEW A.&M. COLLEGE
parts of the
TEXAS A.&M. COLLEGE SYSTEM
VISITORS WELCOME

School of Agriculture

The School of Agriculture offers three four-year curricula leading to a Bachelor of Science in Agriculture. They are the curriculum in Agricultural Education, the curriculum in Agriculture and the curriculum in Agricultural Engineering. Total Semester Hours Required for Graduation, 140.

The curriculum in Agricultural Education is designed primarily to train men who expect to become teachers of vocational agriculture in Texas high schools participating in federal funds.

The curriculum in Agriculture is offered for those men who are preparing for the business of farming; for research workers; for employment in work with the various governmental agricultural agencies; farm managers; teaching in high schools and agricultural colleges. It offers training for students who plan to process and market agricultural products. The technical subjects covered in this curriculum are agronomy, agricultural economics, animal husbandry, dairy husbandry, dairy manufacturing, horticulture, ornamental horticulture and poultry husbandry.

The curriculum in Agricultural Engineering is offered in cooperation with the School of Engineering. The course offerings in agricultural engineering deal with the application of the fundamental branches of engineering to the special requirements of agriculture. This curriculum is designed to train students in both engineering and agriculture who are qualified to develop, design, organize and direct engineering work in the agricultural and closely allied areas.

An Agricultural Experiment station which is located on the premises of the campus is directly beneficial to students in agriculture. Through these research discoveries students learn to apply new scientific principles to the business of farming.

The freshman and sophomore years are basic for all agricultural students.

All electives in any of the departments must be officially approved by the Dean of the School of Agriculture and the head of the department in which the student majors.

Students choosing the curriculum in Agriculture are not required to name the department in which they will major until the second semester of the sophomore year.

Beginning with the junior years the curriculum is broadened and varied so as to permit the selection of major areas of study in the agricultural sciences. Students electing to follow a curriculum in a specialized or technical area of agriculture will devote the major part of their junior and senior years to laboratory and classroom assignments that are designed to give a broad knowledge of one of the special areas in technical agriculture.

BASIC FRESHMAN AND SOPHOMORE PROGRAM

FRESHMAN YEAR

First Semester	*Hrs.*	*Second Semester*	*Hrs.*
English 113 — Grammar and Composition	3	English 123 — Reading and Composition	3
Mathematics 173 — Applied Mathematics	3	Mathematics 183 — Applied Mathematics	3
Animal Husbandry 113 — Types and Market Classes	3	Agronomy 123 — Fundamentals of Crop Production	3
Biology 134 — General Botany	4	Biology 114 — General Zoology	4
Chemistry 114 — Inorganic Chemistry	4	Chemistry 124 — Inorganic Chemistry	4
Agricultural Education 111 — Orientation	1	Military Science 122 — Elementary	2
Military Science 112 — Elementary	2	Physical Education 121 — Freshman Practice	1
Physical Education 111 — Freshman Practice	1		—
	21		20

THE E. B. EVANS PLANT AND ANIMAL INDUSTRIES BUILDING . . . Named for the current College Administrator, it houses the Dean of the School of Agriculture and members of the Agriculture Staff.

SOPHOMORE YEAR

First Semester	*Hrs.*	*Second Semester*	*Hrs.*
English 213 Fundamentals of Speech	3	English 223 Introduction to Literature	3
Political Science 113 National Government	3	Political Science 123 State Government	3
History 173 United States 1492-1876	3	History 183 United States 1877-Present	3
Dairying 213 Elements of Dairying	3	Dairying 223 Dairy Production	3
Chemistry 314 General Organic	4	Agricultural Engineering 123 Farm Shop	3
Horticulture 233 Vegetable Gardening	3	Poultry 223 Poultry Production	3
Military Science 212 Elementary	2	Military Science 222 Elementary	2
Physical Education 211 Sophomore Practice	1	Physical Education 221 Sophomore Practice	1
	22		21

AGRICULTURAL EDUCATION

JUNIOR YEAR

Agricultural Education 313 New Farmers of America	3	Agricultural Education 323 Special Methods	3
Veterinary Science 323 Livestock Diseases and Sanitation	3	Sociology 233 Rural Sociology	3
Biology 334 Bacteriology	4	Agronomy 323 Field and Forage Crops	3
Horticulture 313 Fruit Growing	3	Agricultural Economics 213 Fundamentals of Economics	3
Animal Husbandry 313 Feeds and Feeding	3	Entomology 323 General Entomology	3
Military Science 312 Advanced	2	Military Science 324 Advanced	4
	16 or 18	Agricultural Engineering 214 Farm Machinery	4
			19 or 23

SENIOR YEAR

Biology 254 Genetics	4	Agricultural Education 426 Practice Teaching	6
Agricultural Economics 323 Marketing Agricultural Products	3	Agricultural Economics 423 Farm Management	3
Education 343 Human Development	3	Poultry Husbandry 433 Incubation and Brooding	3
Agricultural Engineering 313 Farm Drainage	3	Agricultural Education 433 Special Problems	3
Animal Husbandry 343 Farm Meats	3	Animal Husbandry 422 Problems	2
Agronomy 423 Soil Conservation	3	Military Science 422 Advanced	2
Military Science 414 Advanced	4	Horticulture 423 Landscape Gardening	3
	17 or 21		18 or 20

AGRICULTURAL ENGINEERING

FRESHMAN YEAR

Mathematics 115 College Algebra and Trigonometry	5	Mathematics 123 Trigonometry	3
Chemistry 114 Inorganic Chemistry	4	English 123 Reading and Composition	3
General Engineering 113 Engineering Graphics I	3	Chemistry 124 Inorganic Chemistry	4
General Engineering 111 Engineering Lectures	1	General Engineering 122 Engineering Graphics II	2
English 113 Grammar and Composition	3	General Engineering 162 Engineering Problems and Slide Rule	2
Military Science 112 Elementary	2	Agricultural Engineering 123 Farm Shop	3
Physical Education 111 Freshman Practice	1	Military Science 122 Elementary	2
	19	Physical Education 121 Freshman Practice	1
			20

SOPHOMORE YEAR

First Semester	*Hrs.*	*Second Semester*	*Hrs.*
Mathematics 214 Calculus	4	Mathematics 224 Calculus	4
Physics 215 Engineering Physics I	5	Physics 225 Engineering Physics II	5
English 213 Public Speaking	3	English 223 Introduction to Literature	3
Animal Husbandry 113 Types and Market Classes	3	Civil Engineering 323 Soil Engineering	3
Architecture 222 Freehand Drawing II	2	Civil Engineering 122 Elementary Surveying	2
Military Science 212 Elementary	2	Military Science 222 Elementary	2
Physical Education 211 Sophomore Practice	1	Physical Education 221 Sophomore Practice	1
	20		20

JUNIOR YEAR

Civil Engineering 243 Applied Mechanics I—Statistics	3	Civil Engineering 314 Strength of Materials	4
Mechanical Engineering 313 Thermodynamics I	3	Civil Engineering 322 Strength of Materials Lab.	2
Agronomy 123 Fundamentals of Crop Production	3	Agricultural Engineering 423 Farm Engines and Tractors	3
Political Science 113 American National Government	3	Political Science 123 State Government	3
Agricultural Engineering 213 Farm Machinery	3	Civil Engineering 364 Fluid Mechanics	4
Mechanical Engineering 262 Foundry	2	Civil Engineering 343 Engineering Materials	3
	17		19

SENIOR YEAR

Agricultural Engineering 213 Farm Machinery	3	Electrical Engineering 304 Principles of Electrical Engineering	4
Civil Engineering 213 Topographic Surveying	3	Agricultural Economics 423 Farm Management	3
Agricultural Engineering 343 Farm Building and Construction	3	Agronomy 423—Soil Conservation	3
Economics 213 Principles of Economics	3	History 183 U. S. History 1877 to Present	3
Agricultural Engineering 413 Farm and Home Utilities	3	Agricultural Engineering 313 Farm Drainage	3
Horticulture 343—Food Preservation	3	Non-technical Elective	3
History 173 U. S. History 1492 to 1876	3		19
	21		

AGRICULTURAL ECONOMICS

JUNIOR YEAR

Agricultural Economics 313 Cooperatives	3	Agricultural Economics 343 Records and Accounts	3
Agricultural Economics 333 Advanced Economics	3	Agricultural Economics 363 Agricultural Credits	3
Agricultural Economics 353 Legal Relations of the Farmer	3	Agricultural Economics 373 Marketing Livestock and Products	3
Economics 203—Survey of Economics	3	Sociology 233—Rural Sociology	3
Military Science 312—Advanced	2	Military Science 324—Advanced	4
Electives	6	Electives	6
	18 or 20		18 or 22

SENIOR YEAR

Agricultural Economics 323 Marketing Farm Products	3	Agricultural Economics 423 Farm Management	3
Agricultural Economics 413 Natural Resources and Conservation	3	Sociology 303 The Family	3
Agricultural Economics 403 International Agricultural Economics	3	Military Science 422—Advanced	2
Sociology 263—General Sociology	3	Electives	8
Military Science 414—Advanced	4	English 373 Journalism	3
Electives	5		17 or 19
	17 or 21		

ANIMAL SCIENCE

JUNIOR YEAR

First Semester	*Hrs.*	*Second Semester*	*Hrs.*
Biology 254—Genetics	4	Poultry 403	3
Animal Husbandry 343	3	Marketing and Processing	
Farm Meats		Animal Husbandry 303	3
Biology 334	4	Fitting, Showing and Judging	
Microbiology		Veterinary Science 313	3
Economics 203	3	Anatomy and Physiology	
Survey of Economics		Agronomy 323	3
Animal Husbandry 313	3	Field and Forage Crops	
Feeds and Feeding		Sociology 233—Rural Sociology	3
Military Science 312	2	Economics 213	3
Advanced		Fundamentals of Economics	
		Military Science 324	4
		Advanced	
	17 or 19		18 or 22

SENIOR YEAR

Veterinary Science 323	3	Entomology 323	3
Livestock Diseases and Sanitation		General Entomology	
Agricultural Engineering 413	3	Poultry 433	3
Farm and Home Utilities		Incubation and Brooding	
Animal Husbandry 413	3	Animal Husbandry 423	3
Livestock Management		Animal Nutrition	
Animal Husbandry 403	3	Agricultural Economics 373	3
Animal Breeding		Marketing Livestock and Products	
Military Science 414—Advanced	4	Military Science 422—Advanced	2
		Electives*	6
	12 or 16		18 or 20

PLANT SCIENCE

JUNIOR YEAR

Plant Science 464	4	Horticulture 443	3
Plant Physiology		Floriculture	
Biology 254—Genetics	4	Entomology 323	3
Horticulture 453	3	General Entomology	
Plant Propagation		Agronomy 323	3
Agricultural Engineering 313	3	Field and Forage Crops	
Farm Drainage		Sociology 233—Rural Sociology	3
Biology 334	4	Agricultural Economics 213	3
General Microbiology		Fundamentals of Economics	
Military Science 312—Advanced	2	Military Science 324—Advanced	4
		Plant Science 423	3
		Plant Pathology	
	18 or 20		18 or 22

SENIOR YEAR

Agricultural Economics 323	3	Agronomy 443	3
Marketing Farm Products		Fertilizers	
Horticulture 313	3	Plant Science 403	3
Fruit Growing		Plant Breeding	
Horticulture 433	3	Horticulture 423	3
Advanced Vegetable Gardening		Landscape Gardening	
Agronomy 433	3	Agricultural Economics 423	3
Crop Judging		Farm Management	
Agronomy 423	3	Military Science 422—Advanced	2
Soil Conservation		Electives	6
Electives	3		
Military Science 414—Advanced	4		
	18 or 22		18 or 20

SPECIFIED ELECTIVES FOR ANIMAL SCIENCE MAJORS

To Be Offered in Alternate Years

DAIRYING

Dairying 313	3
Dairy Cattle Feeding and Management	
Dairying 453	3
Dairy Herd Operations	
Dairying 403	3
Creamery Plant Management	
Dairying 323—Dairy Cattle Production	3
	12

POULTRY

Poultry 323	3
Commercial Poultry Plant Management	
Poultry 312—Poultry Judging	2
Poultry 453	3
Fundamentals of Poultry Nutrition	
Poultry 443	3
Breeding	
	11

ANIMAL HUSBANDRY

First Semester	*Hrs.*
Animal Husbandry 433	3
Beef Cattle and Horse Management	
Animal Husbandry 443	3
Swine and Sheep Management	
Animal Husbandry 412	2
Meat Selection	
Animal Husbandry 453	3
Animal Physiology	
	11

Second Semester	*Hrs.*
Horticulture 343	3
Food Preservation	

DESCRIPTION OF COURSES

AGRICULTURAL EDUCATION

111. Orientation. (AgEd 111 Orientation) (1-0) Credit 1.

313. New Farmers of America. (AgEd 313 NFA) (3-0) Credit 3. I or II Methods of making vocational education in Agriculture more effective through the New Farmers of America Organization.

323. (formerly 373) Special Methods of Teaching Vocational Agriculture in Secondary Schools. (AgEd 323 Spec Meth) (3-0) Credit 3 II. Special emphasis given to making outlines, lesson plans, surveys, and to reference books and bulletins needed in teaching.

403. Supervised Practice Records. (AgEd 403 Records) (3-0) Credit 3. Instructional methods in keeping, analyzing and using farm records.

426. Observation and Practice Teaching in Agriculture. (AgEd 426 Prac Tchg) (1-0) Credit 6.

433. Special Problems.* (AgEd 433 Problems) (By Appointment Only.) Credit 3. II.

AGRONOMY

123. Fundamentals of Crop Production... (Agrn 123 Production) (2-2) Credit 3. II. Science of crop production; crops plants in relation to environment; botany of crop plants; crop improvement; tillage practices; crop rotation; seeds and seeding; and harvesting of crops. Lab fee: $2.00.

323.....Field and Forage Corps... (Agrn 323 Crops) (2-2) Credit 3... II. Major field and forage crops in the United States; special reference to production areas, cultural practices and harvesting and storage. Lab fee: $2.00

423. Soil Conservation (Agrn 423 Conservation) (2-2) Credit 3. II. Erosion, as affected by climate and vegetation; controlling erosion, naturally and artificially. Lab fee: $2.00.

433. Principles of Crop Judging. (Agrn 433 Crop Judging) (2-2) Credit 3. I. Judging crop quality, germination, soundness with implications for improvement of major economic crops. Lab fee: $2.00.

443. Fertilizers. (Agrn 443 Fertilizers) (2-2) Credit 3. II. Basic fertilizers and materials; manures and liming. Lab fee: $3.00.

ANIMAL HUSBANDRY

113. Types and Market Classes of Livestock. (A H 113 Livestock) (2-2) Credit 3. 1. Judging types, carcasses, market classes and marketing livestock. Lab fee: $2.00.

303. Fitting and Showing Livestock. (A H 303 Lvstock Show) (2-2) Credit 3. II. Selecting, grooming, handling and showing beef cattle, dairy cattle, sheep and swine for show and sale. Lab fee: $2.00.

313. Feeds and Feeding. (A H 313 Feeding) (2-2) Credit 3. I. Composition and digestibility of feedstuffs; physiology, preparation, feeding standards and calculation of rations for farm animals. Lab fee: $3.00.

*For second semester in Agricultural Education.

343. Farm Meats. (A H 343 Farm Meats) (2-2) Credit 3. I. Methods of killing, cutting, grading and preserving farm animals. Lab fee: $4.00.

403. Animal Breeding. (A H 403 Breeding) (3-0) Credit 3. II. Physiology of reproduction, breeding systems, and practices; application of genetic principles to the problems of animal breeding.

412. Meat Selection and Cutting. (A H 412 Meat Cutting) (1-2) Credit 2. I. Classification and grading farm meats; nutritive values; factors influencing quality and dressing percentages of meats from different animals. Lab fee: $3.00.

413. Livestock Management. (A H 413 Stock Mgnt) (2-2) Credit 3. I. Methods and practices used in the production and management of beef cattle, swine, sheel and work animals. Lab fee: $2.00.

422. Special Problems. (A H 422 Problems) (2-0) Credit 2. II. Research problems in animal husbandry; planning, execution, compiling and summarizing the data in publication form.

423. Animal Nutrition. (A H 423 Nutrition) (3-0) Credit 3. II. Principles of animal nutrition and feeding practices; recent findings and experimental procedures.

433. Beef Cattle and Horse Management. (A H 433 Cattle) (2-2) Credit 3. I. Systematic studies of methods of breeding, feeding and management practices used in beef cattle and horse production. Lab fee: $2.00.

443. Swine and Sheep Management. (A H 443 Swine Mgnt) (3-0) Credit 3. Systematic studies of methods of breeding, feeding and management practices in swine and sheep production.

453. Animal Physiology. (A H 453 Physiology) (2-2) Credit 3. II. Physiology of the domestic animals; digestion, absorption, metabolism, excretion and reproduction. Lab fee: $2.00.

AGRICULTURAL ECONOMICS

213. Fundamentals of Economics. (AgEc 213 Fundamentals) (3-0) Credit 3. II. Study of agriculture as an industry, including regions, types of farming, tariff, and national production programs.

313. Cooperatives. (AgEc 313 Cooperatives) (3-0) Credit 3. I. Principles involved in the successful operation of cooperative organizations: marketing, purchasing, and other forms of cooperation are included.

323. Marketing Farm Products. (AgEc 323 Mktg Prod) (3-0) Credit 3. II. Principles underlying the successful marketing of farm products; middlemen, grading, packing and shipping are included.

333. Advanced Economics. (AgEc 333 Adv Econ) (3-0) Credit 3. I. Principles of economics applied to special problems of agriculture, farm credit, tenancy, farm ownership, land values and governmental policies are related to agriculture.

343. Records and Accounts. (AgEc 343 Records) (303) Credit 3. II. The various systems of farm record keeping farm accounts, property, labor, feed, production, and field records are included.

353. Legal Relations of the Farmer. (AgEc 353 Legal Rltns) (3-0) Credit 3. I. Legal instruments as they affect the farmer; contracts, corporations, partnerships, bankruptcy, auctions, wills, deeds, abstracts, insurance companies, banks and the Farm Credit Administration.

363. Agricultural Credit. (AgEc 363 Agri Credit) (3-0) Credit 3. Includes the credit needs of farmers; the institutions involved; legal instruments; and cost of credit from various sources.

373. Marketing Livestock and Product. (AgEc 373 Mktg Lvstock) (3-0) Credit 3. A study of the marketing of livestock and livestock products. The

assembly of livestock, cooperative association, country dealers, auctions, terminal markets, packing plants, wholesale and retail meat dealers. The decentralization of markets, the growth of direct marketing and the rise of demand for sales based on carcass weight and grade.

403. International Agricultural Economics. (AgEc 403 International) (3-0) Credit 3. I. Principal agricultural areas, population, livestock, crop production belts, international trade, tariff and reciprocal trade agreements.

413. Land Economics. (AgEc 413 Land Econ) (3-0) Credit 3. I. Land and the population; agricultural land; land as property; recreational land; land tenure and soil conservation.

423. Farm Management. (AgEc 423 Farm Mgnt) (3-0) Credit 3. II. Practical farm management problems; farm records, choosing a farm; farm labor and equipment; cropping; feeding, and production costs.

AGRICULTURAL ENGINEERING

123. Farm Shop. (Engr 123 Farm Shop) (1-4) Credit 3. II. Farm workshop methods; tool identification, care, and use; skills in fitting farm tools and making simple working drawings. Course includes some woodwork, forging, soldering, welding and general repairs. Lab fee: $2.00.

213. Farm Machinery. (Engr 213 Machinery) (2-1) Credit 3. 1. Identification, care, use, repair and maintenance of farm machinery. Lab fee: $2.00.

313. Farm Drainage. (Engr 313 Drainage (1-4) Credit 3. I. Land drainage; terracing, gully control, irrigation and land reclamation. Lab fee: $3.00.

343. Farm Buildings and Construction. (Engr 343 Farm Bldg) (1-4) Credit. 3. II. Planning, construction and repair of farm buildings and structures. Lab fee: $2.00.

413. Farm and Home Utilities. (Engr 413 Utilities) (1-4) Credit 3. I. Installation, operation, care and repair of ventilation, heating, lighting, water supply, sewage disposal, refrigeration units and air-conditioning units. Lab fee: $2.00.

423. Farm Engines and Tractors. (Engr 423 Engines) (1-4) Credit 3. II. Operation, care and repair of tractors, trucks, and automobiles; tractor types and sizes and their economic adaptability and utilization. Lab fee: $2.00.

DAIRYING

213. Elements of Dairying. (Dair 213 Elements) (2-2) Credit 3. I. An introduction to dairying; branches of the dairy industry; judging, breeding and management of dairy cattle. Lab fee: $2.00.

223. Dairy Production. (Dair 223 Production) (2-2) Credit 3. II. The dairy industry; major factors in management of dairy cattle for milk production; production and processing of milk and milk products. Lab fee: $2.00.

313 Dairy Cattle Feeding and Management. (Dair 313 Feeding) (2-2) Credit 3. I. The physiology and chemistry of digestion; the nutrients as applied to economic feeding. Lab fee: $2.00.

323. Dairy Cattle Production. (Dair 323 Cattle) (2-2) Credit 3. II. The dairy breeds; management of purebred herds; modern testing and breeding methods and their application to profitable dairy farming. Lab fee: $2.00.

403. Creamery Plant Management. (Dair 403 Plant Mgnt) (2-2) Credit 3. I. Production, transportation, processing, plant management and distribution of milk and related products. Lab fee: $3.00.

453. Dairy Herd Operation and Management. (Dair 453 Herd Operatn) (2-2) Credit 3. II. Adusting the herd and available facilities to market demands; management of the dairy farm. Lab fee: $3.00.

ENTOMOLOGY

323. General Entomology. (Ent 323 Entomology) (2-2) Credit 3. II. Insect morphology, life histories, family characteristics, habits and their agricultural relationships. Lab fee: $2.00.

HORTICULTURE

233. Vegetable Gardening. (Hort 233 Veg Gard) (2-2) Credit 3 II. Principles of successful home and commercial vegetable gardening in the South. Lab fee: $2.00.

313. Fruit Growing. (Hort 313 Fruit) (2-2) Credit 3. I. Principles of fruit growing, with special reference to the conditions of Texas, including location, varieties, soil, fertilizers, planting and cultural methods; pruning, spraying, harvesting, and sorting also discussed and demonstrated. Lab fee: $2.00.

343. Food Preservation. (Hort 343 Preservation) (1-4) Credit 3. I. Equipment, recipes and directions for home food preservation. Lab fee: $2.00.

423. Landscape Gardening. (Hort 423 Landscape) (2-2) Credit 3. II. Ornamental use and adaptation of plants, methods of propagation, lawn maintenance and upkeep with practical application to simple designs of small porperties. Lab fee: $2.00.

433. Advanced Vegetable Gardening. (Hort 433 Adv Veg Gard) (2-2) Cred-3. A study of experimental results with vegetable crops of commercial importance. Particular emphasis will be placed on study of vegetables of importance in Texas, such as tomatoes, cabbage, onions, sweet potatoes, lettuce, watermelons, cantaloupes and Irish potatoes. Lab fee: $2.00.

443. Floriculture. (Hort 443 Floriculture) (2-2) Credit 3. I. Principles of producing flowers for sale; growing of house plants; and arrangement of cut flowers. Lab fee: $2.00.

453. Plant Propagation. (Hort 453 Propagation) (2-2) Credit 3. Propagation of plants; nursery development. Lab fee: $2.00.

POULTRY

223. Poultry Production. (Poul 233 Production) (2-2) Credit 3. II. Poultry breeds and types; incubation and brooding; culling for egg production; housing and equipment construction and care. Lab fee: $2.00.

312. Poultry Judging. (Poul 312 Judging) (1-2) Credit 2. I. Production characteristics and evaluation of present breeds and types; production judging methods; standard judging methods; growing and fitting for the showroom. Lab fee: $2.00.

323. Commercial Poultry Plant Management. (Poul 323 Plant Mgnt) (2-2) Credit 3. I. Comprehensive studies in operating poultry farms; breeding and fattening plants and/or special problems. Lab fee: $2.00.

403. Poultry Marketing. (Poul 403 Poultry Mktg) (2-2) Credit 3. I. Methods of handling of eggs, live and dressed poultry for market; candling and grading eggs; killing, dressing, grading and packing poultry for market. Lab fee: $2.00.

433. Incubation and Brooding. (Poul 433 Incubation (2-2) Credit 3. II. Development of the chick; survey of literature on incubation and brooding; incubation and brooding chicks; hatchery problems and diets. Lab fee: $3.00.

443. Poultry Breeding. (Poul 443 Breeding) (3-0) Credit 3. II. Genetic principles applied to poultry breeding and improvement; inheritance of economically important traits; methods of breeding poultry.

453. Fundamentals of Poultry Nutrition. (Poul 453 Nutrition) (2-2) Credit 3. I or II. Nutritive requirements for growth, egg production, hatchability

and viability. Essentiality of specific nutrients for chick nutrition is demonstrated. Formulation and feeding of these diets in laboratory. Lab fee: $2.00.

VETERINARY SCIENCE

313. Anatomy and Physiology. (Vtsc 313 Anatomy-Phys) (2-2) Credit 3. I. Anatomical and physiological structure; digestive, respiratory and genito-urinary organs of horse, ox, pig, sheep, and chicken; common diseases of farm animals and their prevention. Lab fee: $3.00.

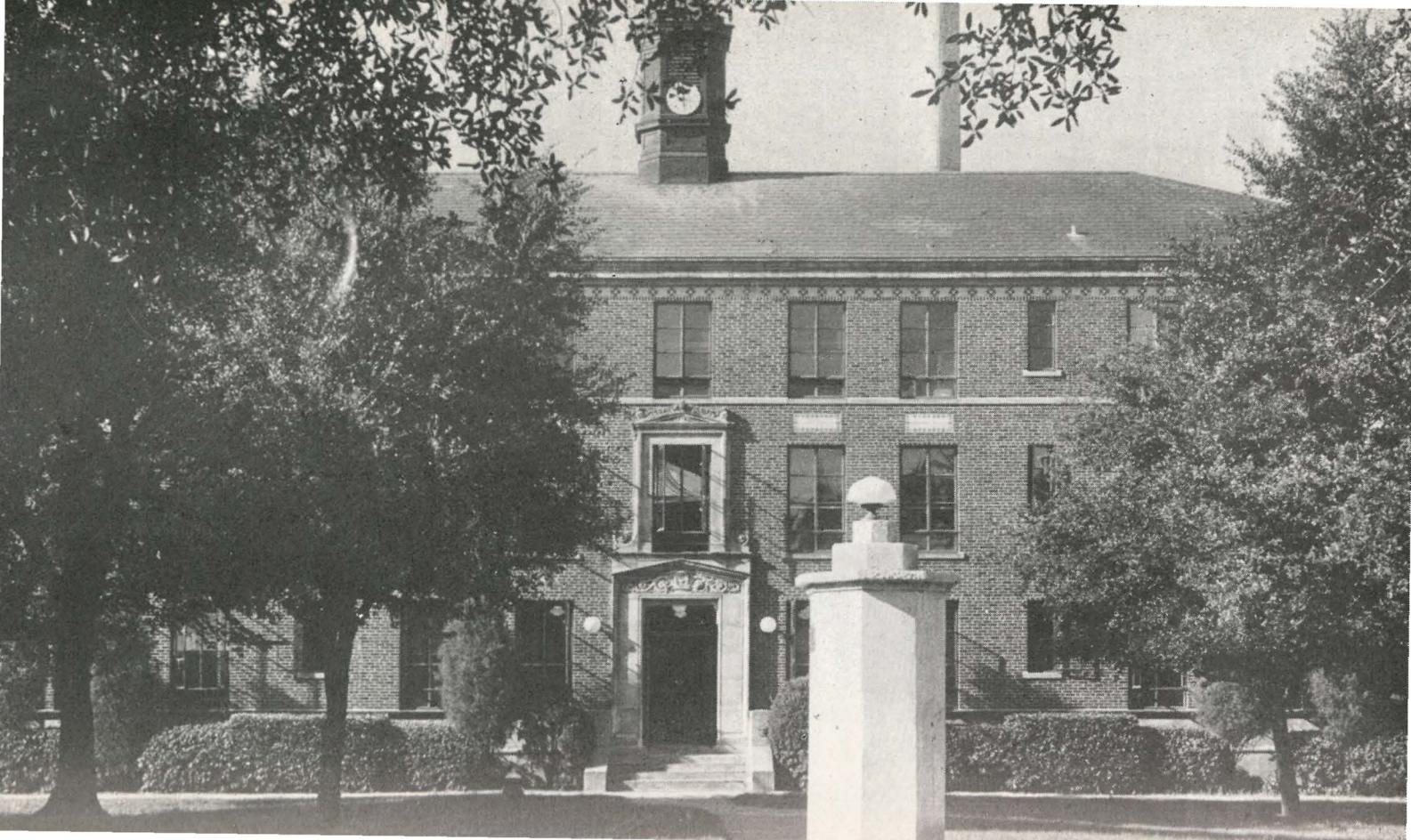
323. Livestock Diseases and Sanitation. (Vtsc 323 Diseases) (2-2) Credit 3. II. A continuation of Veterinary Science 313 with special emphasis on animal diseases and their control and treatment. Lab fee: $3.00.

PLANT SCIENCE

403. Plant Breeding and Improvement. (PlSc 403 Breeding) (3-0) Credit 3. II. Principles involved in breeding economically important crop plants with emphasis on improvements in resistance to disease, drought, insects and extreme temperatures, and for machine harvesting and cultivation.

423. Plant Pathology. (PlSc 423 Pathology) (2-2) Credit 3. II. A study of diseases in plants; diseases found in the economically important crop plants. Lab fee: $3.00.

464. Plant Physiology. (PlSc 464 Physiology) (2-4) Credit 4. I. Structure, physiology of plant organ systems and related principles. Lab fee: $3.00.



School of Arts and Sciences

The School of Arts and Sciences offers courses in Biology, Business Education, Business Administration, Mathematics, Economics, Education, English, History, Music, Health and Physical Education, Physics, Chemistry, Philosophy, Political Science, Sociology, Social Science, Modern Foreign Language, and Library Science.

Students may major in any of the above courses with the exception of Philosophy, Social Science and Modern Foreign Languages; one may, however, minor in Social Science or one of the Foreign Languages.

The first two years' work is designed (1) to give the student a general educational background, regardless of his intended major or the profession he hopes to enter; and (2) to perfect the tools required in more advanced studies.

During the last two years of college work a considerable degree of concentration in a major field is required although ample opportunity is given for cultivating related interests or pursuing studies which do not fall within the field of the student's major.

All freshmen are administered the ACT test. Those freshmen whose standard score is 18 or above are placed in the regular freshman English course. Those making a score lower than 18 must attend 2 additional hours per week in the 113 English course.

Students whose course of study requires College Algebra and higher mathematics are required to take a mathematics placement test. If the score made is unsatisfactory, the student is required to take Mathematics 113. This course must be satisfactorily passed before they are permitted to take advance work in mathematics. Those who make a satisfactory score are placed in Mathematics 115.

Physical Education practice is required of all students — two hours per week throughout the freshman and sophomore years.

All freshman and sophomore students of the School of Arts and Sciences, unless specifically excused by the Registrar before registration or the Dean of the School of Arts and Sciences, are required to follow the prescribed courses as set forth in the catalogue. The various departments will hold to the work and sequence as outlined herein for those who plan to major within the department. Majors and minors, however, should always work out their course of study with the department head.

REQUIREMENTS FOR GRADUATION

The following general requirements must be met by all persons desiring degrees of any type from the School of Arts and Sciences. Minimum Semester Hours Required for Graduation, 120.

ENGLISH (113, 123, 213, 223)	12
FOREIGN LANGUAGE (In one language)	12
SOCIAL SCIENCE ELECTIVE (See General Education Listing)	3
NATURAL SCIENCE (Any Natural Science)	6
MATHEMATICS (Any Mathematics)	6
AMERICAN GOVERNMENT (National and State)	6
AMERICAN HISTORY	6
MILITARY SCIENCE (Men)	8
EDUCATION	18-24 hrs.
PHYSICAL EDUCATION PRACTICE	4

MAJOR AND MINOR REQUIREMENTS

After the completion of the sophomore year all students enrolled in the School of Arts and Sciences must select a major and a minor in one of the departments of the School of Arts and Sciences or a minor in one of the other schools of the College. The selections should be made in consultation with the head of department or designated representative. This is commonly referred to as selecting a major and a minor.

EDUCATION BUILDING . . . The liberal arts classrooms and office building. It houses the offices of the Dean of the School of Arts and Sciences, several Departmental Heads, and instructors.

Each student must also earn an over-all average of "C" in his college work and the specific average required by the department in which the student is majoring or minoring before the student will be approved for graduation.

At least six hours of the last 12 required for the completion of major and minor must be done in residence. The courses must be approved by the department concerned. The acceptance of transferred credits toward the major or minor must also be approved by the Department Head.

All students must have at least a "C" average in their major and minor fields before they will be approved for student teaching and/or graduation.

DEGREES

Bachelor of Arts. The degree of Bachelor of Arts will be conferred upon candidates who satisfy all the general requirements for graduation and satisfactorily complete their work in English, the Social Sciences, or Music.

Bachelor of Music. The degree of Bachelor of Music will be conferred upon candidates who satisfy all the general requirements for graduation and complete not less than 75 semester hours in Music.

Bachelor of Science. The degree of Bachelor of Science will be conferred upon all candidates who satisfy the general requirements for graduation and satisfactorily complete their major work in Mathematics, Natural Science, or Physical Education.

Bachelor of Science in Education. The degree of Bachelor of Science in Education will be conferred upon candidates who satisfy all the general requirements for graduation and satisfactorily complete their major work in Education.

Note.—Students are advised not to select Secondary Education as a major or minor field of concentration. Those who do will be required to complete a second major or minor in some field other than Education. The type of degree to be awarded any person presenting two majors (of which one is Education) will be determined from his second major.

GENERAL CURRICULUM IN THE SCHOOL OF ARTS AND SCIENCES

(The general curriculum is presented merely to show the general college requirements. The courses are not necessarily taken during the semester as listed. The student is still expected to have a major and a minor.)

FRESHMAN YEAR

First Semester	*Hrs.*
Electives	3
English 113	3
Grammar and Composition	
Mathematics 173 (or 113)	3
Elements of Applied Mathematics (or College Algebra)	
Social Science (See Gen. Educ.)	3
College Science 113 or	3 or 4
(Chem. 114 or Biol. 114 General Organic Chemistry with Introductory Qualitative Analysis or General Zoology)	
Military Science 112 (Men)—Elem.	2
Physical Education 111	1
Freshman Practice	
	18 or 19

Second Semester	*Hrs.*
Electives	3
English 123	3
Reading and Composition	
Mathematcs 183 (or 123)	3
Elements of Applied Mathematics (or Plane Trigonometry)	
College Science 123 or	3 or 4
(Chem. 124 or Biol. 134 or General Inorganic Chemistry or General Botany)	
Electives	3
Military Science 122 (Men)—Elem.	2
Physical Education 121	1
Freshman Practice	
Industry	2
	18 or 19

SOPHOMORE YEAR

First Semester	*Hrs.*	*Second Semester*	*Hrs.*
Foreign Language 113 (German, French or Spanish) Elementary French, Elementary Spanish or German	3	Foreign Language 123 (French, Spanish or German) French, Elementary Spanish or German	3
Electives	3	Electives (or Education)	3
Political Science 113 American National Government	3	Political Science 123 American State Government	3
English 213 Public Speaking	3	Electives	3
Physical Education 211 Sophomore Practice	1	English 223 Introduction to Literature	3
Military Science 212 (Men)—Elem.	2	Military Science 212 (Men)—Elem.	2
Electives (or Education)	3	Physical Education 221 Sophomore Practice	1
	16		16

JUNIOR YEAR

Foreign Language 213 (French, German or Spanish) Reading and Grammar	3	Foreign Language 223 (French, German or Spanish) Reading and Grammar	3
Elective	3	Elective (or Education 313)	3
Military Science 312 (or Electives) Advanced (Men)	2	Electives (or Major)	3
Electives (or Education 343)	3	Military Science 324 (or Elective) Advanced (Men)	4
Electives	3	Electives (or Education)	3
	15		15

SENIOR YEAR

First and/or Second Semesters	Hrs.	
American History	6	(May be taken at any time)
Education 483, 406 or 306 (or Electives)	9	
Electives (or Major or Minor Work)	9	
Military Science 413 and 423 (Men) (or Electives)	6	
	30	

Department of Business Administration

The purpose of the Department of Business Administration is to provide specialized training for those who are seeking positions of responsibility in business enterprise or education. The department offers two distinct undergraduate programs leading to the Bachelor's degree.

A four-year program in Business Administration is offered for students who wish to develop the abilities necessary for responsible positions in business and government, or who plan to go into business for themselves. The factual content of the courses will prepare the student for accounting, selling, marketing, and management positions.

A four-year program in Business Education is offered for students who wish to prepare themselves for commercial teaching positions in secondary schools. The program combines a well-balanced combination of general education, professional education and business education.

The department also offers a two-year training program in Secretarial Science for persons not pursuing an undergraduate degree. The program is designed to prepare students for responsible secretarial positions.

For a major in Business Administration, fifty-five hours are required in courses numbered above the Freshman level. For a major in Business Education, forty-eight hours are required, of which 18 must be in courses numbered above the Sophomore level. Minors in the department must present twenty-four hours in selected course offerings in consultation with the Head of the Department.

In the interest of maintaining high academic standards, all majors and minors must maintain an average of "C" with no grades below "C".

Students from other programs within the college seeking admission to programs offered by the Department of Business Administration must present evidence of being in good standing with previous major department and presenting a "C" average or better on all previously attempted courses.

Each student who selects a major in Business Education or Secretarial Science is required to show, at the end of his Junior year, a proficiency in skills of shorthand and typewriting by acquiring a minimum speed of 50 net words per minute in typewriting and 100 words per minute in shorthand.

SUGGESTED PROGRAM FOR BUSINESS EDUCATION MAJORS

FRESHMAN YEAR

First Semester	*Hrs.*	*Second Semester*	*Hrs.*
English 113 Grammar and Composition	3	English 123 Reading and Composition	3
Mathematics 173 Applied Math	3	Mathematics 183 Applied Math	3
Political Science 113 National Government	3	Political Science 123 State Government	3
Business Education 132 Elementary Typewriting	2	Business Education 142 Elementary Typewriting	2
Business Administration 143 Introduction to Business	3	Social Science 113 or Soc. 123 Introduction to Social Science or Minorities	3
Military Science 112 Elementary	2	Military Science 122 Elementary	2
Physical Education 111 Freshman Practice	1	Physical Education 121 Freshman Practice	1
Natural Science 113 College Science	3	Natural Science 123 College Science	3
	19 to 20		19 or 20

SOPHOMORE YEAR

English 213 Public Speaking	3	English 223 Introduction to Literature	3
History 173 American History	3	History 183 American History	3
Business Education 153 Beginning Shorthand	3	Business Education 163 Beginning Shorthand	3
Business Administration 253 Elementary Accounting	3	Business Administration 263 Elementary Accounting	3
Business Education 272 Advanced Typewriting	2	Business Education 282 Advanced Typewriting	2
Military Science 212 E'ementary	2	Business Education 303 Business Correspondence	3
Physical Education 211 Sophomore Practice	1	Military Science 222 Elementary	2
Economics 213 Principles of Economics	3	Physical Education 221 Sophomore Practice	1
	19 or 20		19 to 20

JUNIOR YEAR

Eduation 313 American Public School and Curriculum	3	Education 343 Human Development and Learning	3
Business Education 253 Advanced Shorthand	3	Business Education 263 Advanced Shorthand	3
Business Education 312 Office Machines	2	Business Education 423 Methods of Teaching Business	3
Business Administration 373 Business Law	3	Foreign Language 123 Elementary French or Spanish	3
Foreign Language 113 Elementary French or Spanish	3	Business Education 372 Secretarial Practice	2
Elective (Minor)	3	Elective (Minor)	3
	17		17

SENIOR YEAR

Foreign Language 213 Elementary French or Spanish	3	Foreign Language 223 Elementary French or Spanish	3
Business Education 304 Office Practice	4	Business Education 406 Student Teaching	6
Education 483 Basic Concepts in Education	3	Electives (Minor)	8
Electives (Minor)	7		17
	17		

SUGGESTED PROGRAM FOR BUSINESS ADMINISTRATION MAJORS

FRESHMAN YEAR

Students who elect Business Administration as a major will follow the same program as outlined for majors in Business Education during the freshman year.

SOPHOMORE YEAR

First Semester	*Hrs.*	*Second Semester*	*Hrs.*
English 213 Public Speaking	3	English 223 Introduction to Literature	3
History 173 American History	3	History 183 American History	3
Business Administration 253 Elementary Accounting	3	Business Administration 263 Elementary Accounting	3
Foreign Language 113 Elementary Spanish or French	3	Foreign Language 123 Elementary Spanish or French	3
Economics 213 Principles of Economics	3	Economics 223 Problems of Economics	3
Military Science 212 Elementary	2	Military Science 222 Elementary	2
Physical Education 211 Sophomore Practice	1	Physical Education 221 Sophomore Practice	1
	17 or 18		17 or 18

JUNIOR YEAR

Business Education 312 Office Machines	2	Business Administration 343 Salesmanship	3
Business Administration 373 Business Law	3	Business Administration 383 Business Law	3
Foreing Language 213 Elementary Spanish or French	3	Foreign Language 223 Elementary Spanish or French	3
Business Administration 353 Intermediate Accounting	3	Business Administration 363 Intermediate Accounting	3
Business Administration 313 Marketing	3	Electives (Minor)	5
Electives (Minor)	3		17
	17		

SENIOR YEAR

Business Education 304 Office Practice	4	Business Administration 423 Income Tax Accounting	3
Business Administration 393 Introduction to Finance	3	Economics 423 Commercial Geography	3
Business Administration 323 Statistics	3	Business Administration 433 Real Estate Principles	3
Business Education 413 Business Research	3	Electives (Minor)	7
Electives (Minor)	4		16
	17		

TWO-YEAR COURSE IN SECRETARIAL SCIENCE

FIRST YEAR

English 113 Grammar and Composition	3	English 123 Reading and Composition	3
Business Administration 143 Introduction to Business	3	Social Science 113 or Soc. 123 Introduction to Social Science or Minorities	3
Business Education 132 Elementary Typewriting	2	Business Education 142 Elementary Typewriting	2
Mathematics 173 Applied Math	3	Mathematics 183 Applied Math	3
Business Education 153 Beginning Shorthand	3	Business Education 163 Beginning Shorthand	3
Physical Education 111 Freshman Practice	1	Physical Education 121 Freshman Practice	1
Military Science 112 Elementary	2	Military Science 122 Elementary	2
Electives (Economics 213)	3	Electives	3
	19 or 20		19 or 20

SECOND YEAR

First Semester	*Hrs.*
Business Administration 253 Principles of Accounting	3
Business Education 253 Advanced Shorthand	3
Business Education 272 Advanced Typewriting	2
Business Education 372 Secretarial Practices	2
Business Administration 312 Office Machines	2
Electives	5
	17

Second Semester	*Hrs.*
Business Administration 263 Principles of Accounting	3
Business Education 263 Advanced Shorthand	3
Business Education 382 Secretarial Practices	2
Business Education 282 Advanced Typewriting	2
Business Education 304 Office Practice	4
Political Science 123	3
	17

DESCRIPTION OF COURSES

BUSINESS EDUCATION

132-142. Elementary Typewriting. (BE 132 142 Elem Typ) (0-5) Credit 2. I and II. Development of sense of touch; master the ordinary vocabulary and proper techniques in the operation of all mechanical parts of the machine. (Formerly 232-242). Prerequisite for 142—30 wpm. Lab fee: $4.50.

153-163. Beginning of Shorthand. (BE 153 163 Shorthand) (3-9) Credit 3. I and II. Thorough knowledge of the fundamental principles of Gregg Shorthand: emphasis on dictation and transcription. (Formerly 253-263.) Prerequisite for 163—50 wpm.

253-263. Advanced Shorthand. (BE 253 263 Shorthand) (3-0) Credit 3. I and II. Dictation and typed transcription. Prerequisite for 253—80 wpm and for 263—100 wpm.

272-282. Advanced Typewriting. (BE 272 282 Adv Typ) (0-5) Credit 2. I and II.. Development of skill in typewriting. (Formerly 372-382.) Prerequisite for 272—40 wpm and for 282—50 wpm. Lab fee: $4.50.

303. Business Correspondence. (BE 393 Bus Correspon) (3-0) Credit 3. Prerequisite: BE 142, 282, or consent of instructor. Language for business purposes; use of the basic tools—words.

302-304. Office Practice. (BE 302-304 Offc Prac) Credit 2-4. I or II. Active program which provides opportunity for practical experience under actual office conditions. Prerequisites: BE 282 and BE 263.

312-322. Introduction to Office Machines. (BE 312-322 Offc Mach) (0-4) Credit 2. I and II. A course designed to provide familiarity with office machines and to provide fundamental knowledges and training in machine operation and application. Prerequisite: BE 142.

372-382. Secretarial Practice. (BE 372-382 Sec Pract) (2-1) Credit 1. I andII. Correlation of business skills with other duties of a secretary. Prerequisites: BE 263 and 282 or consent of the instructor. (Formerly 272-282.)

413. Business Education Research. (BE 413 Bus Ed Rsrch) (3-0) Credit 3. Procedures available in collecting data in connection with the planning and outlining of a research problem in business education or business administration; processing, interpreting data, forming generalization, summaries, conclusions and recommendations.

423. Teaching of Business Subjects. (BE 423 HS Meth) (3-O) Credit 3. I. Recent trends in teaching commercial subjects on the high school level.

433. Problems in Business Education. (BE 433 Problems) (3-0) Credit 3. II. A survey of the problems of the field of business education; designed for teachers and administrators of business subjects, particularly in the secondary school; also for persons who are responsible for other agencies of business education.

BUSINESS ADMINISTRATION

143. Introduction to Business. (BA 143 Introduct) (3-0) Credit 3. The nature of business and its relationship to society. A survey of the various fields and functions of business. A prerequisite to all courses in business administration.

253-263. Elementary Accounting. (BA 253 263 Elem Acct) (3-0) Credit 3. I and II. The fundamental principles of double-entry bookkeeping and the analysis of financial statements. (Formerly 254-264.)

273. Introduction to Electronic Data Processing. (BA 273 Data Process) (3-0) Credit 3. This course will provide a foundation for future detailed study of data processing systems. Lectures will include an introduction to problem organization, the use of flow charts, block diagrams, and decision tables in problem solving. Fundamentals of punched card accounting, card design, form design, function of auxiliary punched card equipment. Basic computer concepts and terminology, computer characteristics, storage media, fundamentals of input and output operations will be covered. Prerequisite: BA 253-263.

283. 1401 Computer Programming I. (BA 283 Computer I) (3-2) Credit 3. The course will cover introduction to the IBM 1401 Computer Card System, instruction format and standard operation codes. Programming drills, exercises, and case studies will serve to bridge the gap between the academic and the real world of data processing and computer programming. Prerequisite: BA 273 (Grade of C).

293. 1401 Computer Programming II. (BA 293 Computer II) (3-2) Credit 3. A continuation of 1401 Computer Programming I. The student will be given actual experience in program debugging, program testing, and familiarization with the 1401 System. Advanced programming technique will be covered. Prerequisite: BA 283 (Grade of C).

303. Principles of Management. (BA 303 Mgmt Prncpls) (3-0) Credit 3. 18 weeks. Planning, organization, and control of group activities; the application of scientific management of individual and human problems; the problems of procurement, production, distribution, cost control, and evaluation of effort; executive development.

313. Marketing. (BA 313 Marketing) (3-0) Credit 3. I. An introduction to the fundamentals of marketing. Problems involving marketing procedures, policies and techniques are considered.

323. Elementary Business Statistics. (BA 323 Statistics) (3-0) Credit 3. Basic methods of collecting and presenting numerical data, together with analysis of frequency distributions, time series, reliability, index numbers and simple correlation.

343. Salesmanship. (BA Salesmanship) (3-0) Credit 3. II. The approach to selling how to meet objections, arouse desires and close a sale. (Formerly 363.)

353-363. Intermediate Accounting. (BA 353-363 Accounting) (3-0) Credit 3. I and II. Theory and problems of valuation of assets; application of funds; corporation accounts and statements and their interpretation. Prerequisite: BA 253-263.

373-383. Business Law. (BA 373 383 Bus Law) (3-0) Credit 3. I and II. Fundamental principles of law most frequently involved in business transactions, including contracts sales, partnerships, corporations, agency, negotiable instruments, property, bailments and insurance.

393. Introduction to Finance. (BA 393 Introduct Finc) (3-0) Credit 3. I. Corporate organization and control; securities, the management of fixed

capital and working capital; reserve, surplus and dividend policies; investment banking and the securities market. Prerequisite: BA 263.

423. Income Tax Accounting. (BA 423 Tax Acct) (3-0) Credit 3. II. Analysis of federal income tax law; procedure in using the federal tax law and regulations to determine the amount of the tax liability for individuals and corporations. Prerequisite: BA 263.

433. Real Estate Principles. (BA 43 Real Estate) Credit 3. A survey of the real estate field with emphasis upon deeds, leases, zoning, brokerage, selling, advertising, property management and real estate law.

443. Auditing. (BA 443 Auditing) (3-0) Credit 3. Auditing standards and their application to the audit procedure; review of accounting theory and principles relating to auditing practice; duties and responsibilities of the auditor; types of audits; and methods of internal control. A detailed audit case is included.

453. Life Insurance. (BA 453 Life Ins) (3-0) Credit 3. I. A study of the life insurance industry companies, contracts and markets.

473. Cost Accounting (BA 473 Cost Acctng) (3-0) Credit 3. Cost determination for manufacturing, distribution, and service operations; accumulation and recording of the cost of materials, labor, and overhead; job order, job lot, process, estimated, and standard cost systems; cost control; and joint and by-product costing.

493. Machine Accounting Methods and Practices. (BA 493 Pnch Cd Acctng) (3-0) Credit 3. Elective. Prerequisites BA 253, 263, consent of Department Head. Principally for Busines majors. Basic fundamentals of Punch Card accounting methods, operation of machines, design of tabulating cards, supervision of tabulating department, accounting system applications and preparation of accounting and statistical reports with tabulating equipment.

Department of Economics and Geography

The Department of Economics and Geography offers (1) a major or minor in Economics, (2) a teaching major in Economics, (3) a major or minor in Geography, (4) and a minor in Social Science. Those persons selecting a teaching major in the Department are expected to select a teaching minor outside the Department.

For a major in the department, thirty semester hours are required, of which 18 must be in courses numbered above the Sophomore level. For a minor, students are required to present eighteen semester hours, of which 12 must be in courses numbered above the Sophomore level. The selection of courses must be made in consultation with the Head of the Department.

Departmental Ruling on Academic Status: In the interest of maintaining well-balanced academic standards, all major and minors in the Department must maintain an average of "C" in the Freshman and Sophomore course and an average of "B" in the Junior and Senior courses.

All students selecting a teaching major will be expected to do the usual off-campus practice teaching in education.

INTEGRATED MINOR IN THE SOCIAL SCIENCES

Students may elect an integrated minor in the Social Sciences. The minor in the Social Sciences is planned primarily for the training of teachers, but may be chosen by other students who do not intend to teach when such a program meets their particular needs for professional training in other fields.

Students who elect this program must complete the twenty-four semester

hours of course work listed below with a "C" average or above. This program is exclusive of the six hours of American History and American Government which the college requires all of its students to complete.

The courses comprising the Social Science Minor are:

History 143 or 153	3
Economics 213 and 223	6
Political Science 213 and 383	6
Geography 163 or 173	3
Sociology 343	3
Social Science 383	3

Any advisement in connection with this program may be secured from the Head of any of the participating Departments. (Economics, Political Science and Sociology)

SUGGESTED PROGRAM—(GENERAL) MAJOR IN ECONOMICS

FRESHMAN YEAR

First Semester	*Hrs.*	*Second Semester*	*Hrs.*
Social Science 113 Introduction to Social Science	3	Political Science 113 National Government	3
English 113 Grammar and Composition	3	English 123 Reading and Composition	3
Natural Science 113 College Science	3	Natural Science 123 College Science	3
Geography 163 Introduction to Geography	3	Geography 173 Introduction to Geography	3
Mathematics 113 College Algebra	3	Mathematics 123 Trigonometry	3
Physical Education 111 Freshman Practice	1	Physical Education 121 Freshman Practice	1
Military Science 112 Elementary	2	Military Science 122 Elementary	2
	18		18

SOPHOMORE YEAR

English 213 Public Speaking	3	English 223 World Literature	3
Economics 213 Principles of Economics	3	Economics 223 Economics Problems	3
Foreign Language 113 Elementary French or Elementary Spanish or German	3	Foreign Language 123 Elementary French or Elementary Spanish or German	3
Political Science 113 National Government	3	Political Science 123 American State Government	3
Business Administration 253 Accounting	3	Business Administration 263 Accounting	3
Military Science 212 Elementary	2	Military Science 222 Elementary	2
Physical Education 211 Sophomore Practice	1	Physical Education 221 Sophomore Practice	1
	18		18

JUNIOR YEAR

Foreign Language 213 Advanced Grammar and Reading (French, German or Spanish)	3	Foreign Language 223 Reading and Grammar Review (French or Advanced Grammar and Reading Spanish or German)	3
Economics 313 Public Finance and Taxation	3	Economics 333 Economic History	3
Economics 423 Economic Theory	3	Mathematics 213 Analytical Geometry	3
History 173 United States 1492 to 1876	3	History 183 United States 1876 to Present	3
Military Science 312 Advanced	2	Military Science 324 Advanced	4
Elective	3	Elective	3
	15 or 17		15 or 19

SENIOR YEAR

First Semester	*Hrs.*	*Second Semester*	*Hrs.*
Economics 353 Economic Statistics	3	Economics 463 Modern Economic Thought	3
Economics 481 Economics Seminar	1	Economics 473 International Trade	3
Economics 403 Money and Banking	3	Economics 453 Labor Prob'ems	3
Economics 443 Socialism and Captialism	3	Political Science 213 Po'itical Parties	3
Electives	6	Electives	3
Military Science 414 Advanced	4	Military Science 422 Advanced	2
	16 or 20		15 or 17

SUGGESTED PROGRAM—(TEACHING) MAJOR IN ECONOMICS

FRESHMAN YEAR

Social Science 113 Introduction to Social Science	3	Political Science 113 National Government	3
English 113 Grammar and Composition	3	English 123 Reading and Composition	3
Natural Science 113 College Science	3	Natural Science 123 Co'lege Science	3
Geography 163 Introd ction to Geography	3	Geography 173 Introduction to Geography	3
Business Math 113 or Math 173	3	Mathematics 123 or Mathematics 183 Trigonometry or Applied Math	3
Physical Education 111 Freshman Practice	1	Physical Education 121 Freshman Practice	1
Military Science 112 Elementary	2	Military Science 122 Elementary	2
	18		18

SOPHOMORE YEAR

English 213 Public Speaking	3	English 223 Introduction to Literature	3
Economics 213 Principles of Economics	3	Economics 223 Economic Problems	3
Foreign Language 113 Elementary French, Spanish or German	3	Foreign Language 123 Elementary French, Spanish or German	3
Political Science 123 State Government	3	Economics 342 Personnel Management	2
History 173 United States 1492-1876	3	History 183 United States 1876 to Present	3
Military Science 212 Elementary	2	Economics 333 Economic History	3
Physical Education 211 Sophomore Practice	1	Military Science 212 Elementary	2
	18	Physical Education 221 Sophomore Practice	1
			20

JUNIOR YEAR

Education 313 American Public School	3	Education 343 Human Development and Learning	3
Foreign Language 213 Advanced Grammar and Reading French, Spanish or German	3	Foreign Language 223 Reading and Grammar Review French, Spanish or German	3
Economics 363 Economics of Consumption	3	Social Science 383 Teaching Social Studies in the High School	3
Geography 273 Human Geography	3	Economics 453 Labor Problems	3
Electives	3	Electives	3
Military Science 312 (Men) Advanced	2	Military Science 324 (Men) Advanced	4
	15 or 17		15 or 19

SENIOR YEAR

First Semester	*Hrs.*
Sociology 343	3
Modern Social Problems	
Geography 473	3
Geography in Education	
Education 483	3
Basic Concepts in Education	
Economics 313	3
Public Finance and Taxation	
Electives	3
Military Science 414	4
Advanced	
	15 or 19

Second Semester	*Hrs.*
Economics	3
Education 406	6
Economics 423	3
History of Economic Theory	
Economics 481	1
Seminar in Economics	
Electives	3
Military Science 422	2
Advanced	
	16 or 18

SUGGESTED PROGRAM—MAJOR IN GEOGRAPHY

FRESHMAN YEAR

English 113	3
Grammar and Composition	
Social Science 113	3
Introduction to Social Science	
Mathematics 173 or 113	3
Applied Mathematics or College Algebra	
Geography 163	3
Introduction to Physical Geography	
Chemistry 114	4
General Inorganic	
Physical Education 111	1
Freshman Practice	
Military Science 112	2
Elementary	
	21

Political Science 113	3
National Government	
English 123	3
Reading and Composition	
General Botany 134	4
Geography 173	3
Introduction to Physical Geography	
Mathematics 183 or 123	3
Applied Mathematics or Trigonometry	
Physical Education 121	1
Freshman Practice	
Military Science 122	2
Elementary	
	21

SOPHOMORE YEAR

English 213	3
Public Speaking	
Economics 213	3
Principles of Economics	
Foreign Language 113	3
Elementary French or German	
Political Science 123	3
State Government	
History 173	3
United States 1492-1876	
Military Science 212	2
Elementary	
Physical Education 211	1
Sophomore Practice	
	18

English 223	3
Introduction to Literature	
Economics 223	3
Economic Problems	
Foreign Language 123	3
Elementary French or German	
History 183	3
United States 1876 to Present	
Geography 183	3
Economic Geography	
Military Science 212	2
Elementary	
Physical Education 221	1
Sophomore Practice	
	18

JUNIOR YEAR

Education 313	3
American Public School	
Foreign Language 213	3
Advanced Grammar and Reading French or German	
Political Science 323	3
Comparative Governments	
Geography 313	3
World Regional Geography	
Geology 353	3
Introductory	
Military Science 312 (Men)	2
Advanced	
Electives	3
	15 or 17

Education 343	3
Human Development and Learning	
Foreign Language 223	3
Reading and Grammar Review French or German	
Geography 403	3
Cartography	
Geography 303	3
Geography of Texas	
Geography 273	3
Human Geography	
Electives	3
Military Science 324 (Men)	4
Advanced	
	15 or 19

SENIOR YEAR

First Semester	*Hrs.*
Education 483	3
Basic Concepts in Education	
Economics 443	3
Capitalism and Socialism	
Geography 473	3
Geography in Education	
Agronomy 423	3
Soil Conservation	
Geography 443	3
Climatology	
Geography 433	3
Geography of the Americas	
Military Science 414 (Men)	4
Advanced	
	15 or 19

Second Semester	*Hrs.*
Education 406	6
Practice Teaching	
Geography 483	3
Political Geography	
Sociology 363	3
Cultural Anthropology	
Geography 423	3
Industrial and Commercial	
Electives	3
Military Science 422 (Men)	2
Advanced	
	15 or 17

DESCRIPTION OF COURSES

ECONOMICS

203. Survey of Economics. (Econ 203 Survey) (3-0) Credit 3. I or II. Study of production, consumption and other economic institutions.

213. Principles of Economics (Econ 213 Principles) (3-0) Credit 3. I. Basic economic principles as applied to contemporary economic institutions, determination of business and industrial organization; pricing, value, money and banking; and international trade and exchange.

223. Economic Problems (Econ 223 Problems) (3-0) Credit 3. II. An application of economic principles to current economic problems and institutions, monopoly, business cycles, labor problems, public expenditures and revenue, public utilities, and comparative economics. Prerequisite: Economics 213. (This course is a prerequisite to all courses in economics numbered 300 and above.)

313. Public Finance and Taxation. (Econ 313 Finance) (3-0) Credit 3. Introduction to the field of government finance; character and growth of public expenditures; public debt creation and fiscal policy; theories, principles and problems of taxation. Prerequisite: Economics 223.

333. Economic History. (Econ 333 Econ Hist) (3-0) Credit 3. I. The development of agriculture, commerce, industry and transportation from colonial times to the present. Prerequisite: Economics 223.

342-343. Personal Management. (Econ 342 or 343 Persnl Mgnt) (2 or 3-0) Credit 2 or 3 II. The development and importance of employee-employer relationships. Prerequisite: Economics 223.

353. Economic Statistics. (Econ 353 Statistics) (3-3) Credit 3. I. Techniques of gathering, presenting, analyzing and interpreting numerical data. Prerequisite: Economics 223.

362 or 363. Economics of Consumption. (Econ 362-363 Consumption) (2 or 3-0) Credit 2 or 3. II. Relations between consumption, saving, social income and its fluctuations. Prerequisite: Economics 223.

403. Money and Banking. (Econ 403 Banking) (3-0) Credit 3. I or II. A study of the theory of money and banking with emphasis upon monetary policy. Special consideration is given to the implication of methods, monetary and banking control. Prerequisite: Economics 223.

413. Labor Legislation. (Econ 413 Legislation) (3-0) Credit 3. II. Protective, legislation dealing with wages, hours, child labor, old age benefits, and unemployment compensation. Prerequisites: Economics 223 and 343.

423. Intermediate Economic Theory and Policies. (Econ 423 Theory) (3-0) Credit 3. I or II. Analysis and appraisal of early economic theories and their contributions to civilization. Prerequisite: Economics 333.

443. Capitalism and Socialism. (Econ 443 Capitalism) (3-0) Credit 3. II. Capitalism, Unionism, Socialism, Facism, and individualistic, anticipationalism, each viewed under the headings of conditions, theories and movements. Prerequisites. Economics 223 and 413.

453. Labor Problems. (Econ 453 Labor) (3-0) Credit 3. II. The evolution of management union agreements since the turn of the twentieth century. Prerequisites: Economics 223 and 413.

462 or 463. Modern Economic Thought. (Econ 462 or 463 Econ Thought) (2 or 3-0) Credit 2 or 3. II. Analysis and appraisal of recent and contemporary economics and their contribution to public policy. Prerequisites: Economics 323 and 413.

473. International Trade. (Econ 473 Trade) (3-0) Credit 3. II. Principles and practices of foreign trade with special emphasis upon international economic relations. Analysis of foreign exchange, balance of payments, foreign investments, tariff history and policy currency problems, foreign independence. Prerequisites: Economics 223 and 333.

481. Seminar in Economics. (Econ 481 Seminar) (1-0) Credit 1. I or II. Informal seminar meetings once per week to allow staff members and economics majors and minors to develop **espirit de corps** and to discuss contemporary economic developments. (May be repeated.)

GEOGRAPHY

163-173. Introduction to Physical Geography. (Geog 163-173 Introduction) (3-0) Credit 3. I. General introduction to the field of geography, emphasizing the study of the physical earth and man in his physical environment.

183. Economic Geography. (Geog 183 Econ Geog) (3-0) Credit 3. II. A commodity approach to the geography of economic activity. Consideration of selected agricultural commodities and systems of land used in different physical and cultural settings and the role of trade and transportation in interregional relationships.

273. Principles of Human Geography. (Geog 273 Human Geog) (3-0) Credit 3. Economics, social and political adjustments which man makes to various habitats and natural environmental factors as are to human life.

303. Geography of Texas. (Geog 303 Texas) (3-0) Credit 3. Emphasis on the geographic regions of our own state: the problems of proper adaptations of man to environment; the geographic distribution and development of natural resources in the state; the possibilities of greater human development.

313. World Regional Geography. (Geog 313 Regional) (3-0) Credit 3. A survey of the regions and nations of the world and the geographical foundations of their physical and cultural characteristics; a practical and systematic approach to the field of geography; a survey of the world in terms of outlook; regional types.

403. Cartography and Graphics. (Geog 403 Cartography) (3-0) Credit 3. Introduction to the fundamentals of Cartography, the use, availability and evaluation of maps. An interpretation of topographic maps, block diagrams, physical maps, geologic maps; the making of maps by triangulation reproducing and developing map series.

423. Industrial and Commercial Geography. (Geog 423 Industrial) (3-0) Credit 3. Describes and analyzes the geographic distribution of selected energy resources and manufacturing industries. Factors influencing the localization of manufacturing are analyzed to discover geographic and non-geographic considerations affecting industrial development. Problems of industrialization in selected areas.

433. Geography of the Americas. (Geog 433 Americas) (3-0) Credit 3. A systematic study of the different physical economic and cultural settings in the Americas which form the basis for the various forms of livelihood. A regional and systematic approach will be made with attention given to political administrative units. Emphasis will be placed on the United States.

443. Climatology. (Geog 443 Climatology) (3-0) Credit 3. A study of the basic temperature and moisture elements of climatology, atmosphere pressure and wind systems and the general circulation of the atmosphere. An analysis of air mass stability concepts, air mass characteristics in North America and the use and significance of weather maps in climatic studies.

473. Geography in Education. (Geog 473 HS Methods) (3-0) Credit 3. Analyzed the distinctive contribution of geography to education for citizenship on elementary and secondary levels. Discusses teaching sources and organization of materials, textbooks, and test. Designed for teachers of geography, social studies, and related fields.

483. Political Geography (Geog 483 Political) (3-0) Credit 3. A systematic study of the geography of political power settings and the factors that contribute to their stability and instability.

SOCIAL SCIENCE

113. Social Science. (SoSc 113 Introduction) (3-0) Credit 3. Introduction to Social Sciences.

383. Methods of Teaching Social Studies in Secondary Schools. (SoSc 383 HS Methods) (3-0) Credit 3. Methods and devices for teaching History, Economics, Sociology and Political Sciences, as well as various social studies on the Secondary level. Selection and use of appropriate instructional materials.

483. Social Studies in Elementary School. (SoSc 483 Elem Methods) (3-0) Credit 3. Prerequisites: Education 273-283, Education 363. II. Improving social living, emphasis upon the place of democratic values and processes, purposes, content, organization of subject matter and development of materials as a continuous process in appraising the child's learning in terms of social experiences.

Department of Education

MAJOR REQUIREMENTS—Undergraduate program(s)

Students wishing to prepare themselves for teaching in the elementary school or as teachers of the mentally retarded should follow the suggested programs for a major in these areas. These programs include the necessary work in Academic Foundations, Professional Education (including student teaching), and electives to meet the Texas Education Agency's requirements for a Provisional Certificate. Majors should carefully select their second field.

In an effort to maintain academic standards, all majors and minors must maintain an average of "C" or above in Freshman and Sophomore courses. An average of "C" or above must be maintained in the major sequence of professional and content courses offered during the Junior and Senior years.

Students from other programs within the college seeking admission to preparation programs offered by the Department of Education must present evidence of being in good standing with previous major department and presenting a "C" average or better on all previously attempted courses.

Transfer students seeking initial admission to preparation program offered through the Department of Education must present evidence of having

been in good standing with college(s) previously attended and from whom transfer credits are presented for acceptance. Furthermore, admission is based on the students' having maintained in his previous college a "C" average or better in terms of all courses attempted.

Each prospective teacher is required to have student teaching experiences which include at least sixteen weeks, one-half day in the campus elementary school and/or a minimum of eight weeks in one of the college approved off-campus schools.

1. Students taking Education 306 or Education 406 will be required to do only eight weeks off-campus teaching, a full day, for six hours credit.
2. Students interested in qualifying for a Kindergarten-Primary teaching assignment will be required to take Education 309, eight weeks off-campus student teaching, a full day, in a state approved kindergarten, and one-half day on-campus for eight weeks, for nine hours credit or an on-campus assignment of at least eight weeks, full-day, in the College Kindergarten and one-half day on campus for eight weeks as a student teacher with the primary grades.
3. All students who plan to take on-campus or off-campus student teaching—Education 306, Education 309 and Education 406 are requested to obtain approvals through their major departments and/or schools and the office of the Director of Teacher Education before registering for the course.
4. All off-campus student teachers will assume financial responsibilities for student teaching transportation to and from student teaching centers, or with their respective schools.
5. All students who wish to do student teaching should file their application forms for student teaching in the Office of Education by May 1, prior to the regular session in which student teaching is to be taken.
6. All students approved for off-campus student teaching (Education 306, Education 309 and Education 406) should report to their college supervisors for assignments.

All students interested in making declaration of minor fields or second teaching fields should secure advisement and approval through the School and/or Department offering the program along with approval by the Office of the Director of Teacher Education.

A MINOR IN ELEMENTARY EDUCATION

NOTE: This minor is offered or provided for students considered in progress prior to September 1, 1962.

A minor in Elementary Education has the prerequisite of a major in some content field or at least the professional core (Education 253-263, Education 293, Education 373 and Methods).

The required eighteen semester hours for a minor in Elementary Education are as follows:

First Semester	*Hrs.*	*Second Semester*	*Hrs.*
Art Education 253-263	6	Education 463	3
Elementary School Art			
Education 473	3		
Elementary School Science			
Music 253-263	6		
Elementary School Music			
			18

A MINOR IN KINDERGARTEN EDUCATION

NOTE: THIS MINOR IS OFFERED OR PROVIDED FOR STUDENTS CONSIDERED IN PROGRESS PRIOR TO September 1, 1962

Students who desire to minor in Kindergarten Education should secure advisement and approval from the Department of Education. All persons enrolled in the field should take Education 309, Student Teaching (Kinder-

garten-Primary) instead of Education 306, Student Teaching (Elementary School) or Education 406, Student Teaching (Secondary School). A major in Elementary Education and a minor in Kindergarten Education will permit students to teach either Kindergarten or Primary grade levels.

Foods	113	Elementary Nutrition	3 hrs.
Child Dev.	413	Child Guidance	3 hrs.
Soc.	492	Problems of Child Welfare	3 hrs.
Ed.	432	Children's Literature	2 hrs.
Ed.	413	Kindergarten Methods and Materials	3 hrs.
Ed.	309	Student Teaching (Kindergarten-Primary)	9 hrs.
			23 hrs.

A MINOR IN ART EDUCATION

NOTE: This minor is offered or provided for those students considered in progress prior to September 1, 1962.

Students who wish to minor in Art Education should secure advisement and approval by the Department of Education.

	Hrs.
Art Education 253-263 Elementary School Art	6
Art Education 353 Drawing and Composition	3
Art Education 373 History of Art	3
Art Education 383 Special Projects	3
Art Education 453 Organizing of Instruction in Elementary School Art	3
	18

A MINOR IN PSYCHOLOGY

Psychology 113—General Psychology	3 hrs.
Psychology 123—Advanced General Psychology	3 hrs.
Psychology 233—Fundamentals of Statistics	3 hrs.
Sociology 333—Social Psychology	3 hrs.
Psychology 343—Abnormal Psychology	3 hrs.
Psychology 433—Psychology of Personality	3 hrs.
	18 hrs.

A SUGGESTED PROGRAM FOR A MAJOR IN ELEMENTARY EDUCATION

(Applicable to students admitted as of or after September, 1962)

FRESHMAN YEAR

First Semester	*Hrs.*	*Second Semester*	*Hrs.*
English 113 Grammar and Composition	3	English 123 Reading and Composition	3
Foreign Language 113 Elementary French or Spanish	3	Foreign Language 123 Elementary French or Spanish	3
Health Education 203 Personal Hygiene	3	Geography 163 Introduction to Geography	3
Mathematics 263 Structure of the Number System	3	Mathematics 273 Fundamentals of Algebra	3
Natural Science 113 College Science	3	Natural Science 123 College Science	3
Physical Education 111 Freshman Practice	1	Physical Education 121 Freshman Practice	1
Military Science 112 Elementary	2	Military Science 122 Elementary	2
	18		18

SOPHOMORE YEAR

First Semester	*Hrs.*
Political Science 113 American National Government	3
English 213 Public Speaking	3
History 173 American History	3
Electives Courses with resource value for an Elementary Teacher	3
Mathematics 283 Informal Geometry	3
Physical Education 211 Sophomore Practice	1
Military Science 212 Elementary	2
	18

Second Semester	*Hrs.*
Political Science 123 American State Government	3
English 223 Introduction to Literature	3
History 183 American History	3
Minor Combination of selected subjects	6
Physical Education 221 Sophomore Practice	1
Military Science 222 Elementary	2
	18

JUNIOR YEAR

Education 343 Human Development and Learning	3
Education 313 American Public School and Curriculum	3
Music 253 Elementary School Music	3
Education 432 Children's Literature	2
Art Education 253 Elementary School Art	3
Social Science 483 Social Studies in Elementary School	3
	17

Science 473 Elementary School Science	3
Music 263 Elementary School Music	3
Education 433 Language Arts in Elementary School	3
Art Education 263 Elementary School Art	3
Education 463 Foundations in Reading Instructions	3
	15

SENIOR YEAR

Education 483 Basic Concepts in Education	3
Minor Combination of selected subjects with resource value for an Elementary Teacher	12
	15

Electives Courses with resource value for an Elementary Teacher	9
Education 306 Student Teaching in Elementary School	6
	15

SCHEMATIC PLAN FOR ELEMENTARY EDUCATION MAJORS

ACADEMIC FOUNDATIONS

English 113, 123, 213 and 223	12 hrs.
Foreign Language 113, 123	6 hrs.
Mathematics 263, 273	6 hrs.
Science 113, 123	6 hrs.
Social Science	
History 173, 183	6 hrs.
Pol. Sci. 113, 123	6 hrs.
Physical Education 111, 121, 211, 221	4 hrs.
Military Science	8 hrs.
	54 hrs.

ELECTIVES

Education 413—Kindergarten Methods and Materials	3 hrs.
Education 443—Test and Measurements	3 hrs.
Audio-Visual Ed. 303	3 hrs.
Course with resource value	3 hrs.
	12 hrs.

SPECIALIZATION AREA

(Plan I)

Art Ed. 253, 263	6 hrs.
Music E. 253, 263	6 hrs.
Ed. 432—Chil. Lit.	2 hrs.
Geog. 163—Geography	3 hrs.
Hl. Ed. 203—Personal Hygene	3 hrs.
A teaching field or resource area of at least 18 hours or more from one of the following subject areas: Art, Biology, Spanish, Mathematics, Physical Education, History, Music or others based upon prior approval.	
	38 hrs.

PROFESSIONAL DEVELOPMENT

Education 433—Language Arts	3 hrs.
Sci. 473—Elementary School Science	3 hrs.
Education 483—Social Studies	3 hrs.
Math. 283—Informal Geometry	3 hrs.
	12 hrs.

PROFESSIONAL COURSES

Education 313—American Public School	3 hrs.
Education 343—Human Development and Learning	3 hrs.
Education 463—Reading	3 hrs.
Education 483—Basic Concepts in Education	3 hrs.
	12 hrs.

STUDENT TEACHING

Education 306—Student Teaching in Elementary School	6 hrs.
	6 hrs.
	GRAND TOTAL 133 hrs.

PROGRAM FOR THE PERMANENT PROVISIONAL CERTIFICATE FOR TEACHERS OF THE MENTALLY RETARDED—ELEMENTARY SCHOOL LEVEL

This program is basically related to the preparation program for an elementary teacher. Therefore, the previously outlined program for an elementary education major may serve as a basic guide.

ACADEMIC FOUNDATIONS

English 113, 123, 213, 223	12 hrs.
Foreign Language 113, 123	6 hrs.
Mathematics 263, 273	6 hrs.
Science 113, 123	6 hrs.
Social Science	
History 173, 183	6 hrs.
Pol. Sci. 113, 123	6 hrs.
Physical Education 111, 121, 211, 221	4 hrs.
Military Science	8 hrs.
	54 hrs.

ELECTIVES

Education 413—Kindergarten Methods and Materials	3 hrs.
Education 443—Test and Measurement	3 hrs.
12 hrs. in courses having resource value for teachers of the mentally retarded	12 hrs.
	18 hrs.

SPECIALIZATION AREA

(Plan I)

Sp. Ed. 313—Survey Course	3 hrs.
Sp. Ed. 403—Curriculum Bldg.	3 hrs.
Sp. Ed. 413—Problems and Methods	3 hrs.
Sp. Ed. 433—Psychological Problems of Mentally Retarded Children	3 hrs.
A teaching field of at least 18 hours or more from one of the following subject areas: Art Education, Kindergarten Education, Physical Education, Music Education, and Industrial Education.	
	30 hrs.

PROFESSIONAL DEVELOPMENT

Education 432—Children's Literature	2 hrs.
Education 433—Language Arts	3 hrs.
Math 283—Informal Geometry	2 hrs.
Sci. 473—Elementary School Science	3 hrs.
Education 483—Elementary School Social Studies	3 hrs.
	13 hrs.

PROFESSIONAL COURSES

Education 343—Human Development and Learning	3 hrs.
Education 313—American Public School & Curriculum	3 hrs.
Education 463—Reading	3 hrs.
Education 483—Basic Concepts in Education	3 hrs.
	12 hrs.

STUDENT TEACHING

Education 306—Student Teaching	6 hrs.
	GRAND TOTAL 133 hrs.

DESCRIPTION OF COURSES

ART EDUCATION

253-263. Elementary School Art. (ArEd 253-263 Elem Art) (6-0) Credit 6. I and II. Elements and Principles of art as forms of creative expression in relation to the child, to the classroom, and in connection with the entire school curriculum; techniques in developing creative ability.

353. Drawing and Composition. (ArEd 353 Draw Comp) (6-0) Credit 3. I. Basic principles and elements of drawing, compositions, and painting; exploration of various media and subject matter.

373. History of Art. (ArEd 373 History) (3-0) Credit 3. I. Art from prehistoric period to the contemporary period. The course develops an appreciation of art.

383. Special Projects. (ArEd 383 Spec Proj) (6-0) Credit 3. II. Designing and building art forms into unified wholes through various media of expression.

453. Organization of Instruction in Elementary School Art. (ArEd 453 Elem Meth) (6-0) Credit 3. I Procedures, methods and techniques of teaching art in the elementary school.

EDUCATION

Music 253-263. Elementary School Music Methods. (Music 253-263 Elem Meth) (6-0) Credit 6. I and II. School music methods and materials; care and development of child voice.

303-306. Student Teaching. (Educ 303-306 Elem Pr Tchg) Credit 3-6. I and II. Prerequisites. A "C" average in Professional Education Sequence, Art Education, and all required methods courses for a major in Elementary Edu-

cation. Application for approval of on-campus and off-campus student teaching is to be filed with the Head of the Department of Education by May 1, prior to the school year in which student teaching is desired. Each student must participate in Seminar experiences prior to student teaching assignment.

309. Kindergarter-Primary Student Teaching. (Educ 309 Kdgtn Tchg) Credit 9. Prerequisites. A "C" average in Professional Education Sequence, and in all required methods courses for a major in Kindergarten Education. I and II. Supervised on-campus and off-campus student teaching. One-half of time must be spent in a kindergarten school situation, or its equivalent.

313. American Public School and Curriculum. (Educ 313 Pub Sch Educ) (3-0) Credit 3. Role of the public school in the American social order; purposes of public education; organization and administration, curriculum; teacher personnel; school and community relations; financial support.

333. Methods of Teaching. (Educ 333 Meth of Tch) (3-0). Methods techniques and devices as applied to teaching; analysis and evaluation of student learning difficulties and teaching responsibilities; nature, preparation and use of instructional and teaching materials; selection and organization of subject matter.

343. Human Development and Learning. (Educ 343 Human Dvlp) (3-0) Credit 3. Human growth and development and the learning process; its evaluation and guidance.

403-406. Student Teaching (Secondary School). (Educ 403-406 H S Prac Tchg) Credit 3-6. I and II. Supervised on-campus and off-campus teaching. Students should make application for approval to student teach by May 1 prior to the school year in which student teaching is desired. Prerequisites: Completion of Professional Education Sequence and prior approval of major department and Central Teacher Education Council. Each student must participate in Seminar experiences prior to students teaching assignment.

413. Kindergarten Methods and Materials. (Educ 413 Kdgtn Meth) (3-0) Credit 3. Selection and use of materials for program organization, creative expression, physical and mental activities, directing work habits and informal experiences in language arts and number work.

432. Children's Literature. (Educ 432 Children Litr) (2-0) Credit 2. The reading and evaluation of books for children, information about children's books, children's interest in reading, important authors and illustrators, and problems in the guidance of reading.

433. Language Arts in the Elementary School. (Educ 433 Elem Lang Arts) (3-0) Credit 3. I or II. Oral and written expression, spelling and handwriting. Conditions necessary for children's best development in the language arts; materials and procedures for improving the quality of instruction in these fields.

443. Tests and Measurements. (Educ 443 Test Measrm) (3-0) Credit 3. I or II. Principles of making and using; tests; use of standardized tests.

463. Foundations in Reading Instruction. (Educ 463 Found) (3-0) Credit 3. I or II. The various stages in the development of reading. Special emphasis on reading readiness developing experience backgrounds, diagnostic approaches, and meeting individual needs and interests, and enriching the individual reading program.

483. Basic Concepts in Education. (Educ 483 Basic Concpt) (3-9) Credit 3. History, Philosophy, status and trends of education in the United States and other countries of the world; major education problems; teaching as a profession.

PSYCHOLOGY

113. General Psychology. (Psy 113 Gen Psych) (3-0) Credit 3. An introductory course dealing with the elementary principles of human behavior. Some attention is focused upon the application of psychology and social problems and situations.

123. General Psychology. (Psy 123 Gen Psy) (3-0) Credit 3. I Personality development through personal-social and cultural social conditioning; larger group relationships. Prerequisite: Psychology 113; General Psychology.

233. Fundamentals of Statistics. (Psy 233 Statistics) (3-0) Credit 3 I or II. Understandings and techniques of collecting, tabulating, and computing statistical data from central tendency through variability relationship, and the significance of differences among such measures.

343. Abnormal Psychology. (Psy 343 Abnormal) (3-0) Credit 3. II. Prerequisite: Psychology 123, Advanced General Psychology. An examination of the organic and functional types of psychological abnormality, with emphasis on the ways in which personality may become disordered. Evidence and theories concerning causation and the problems of treatment are considered.

443. Psychology of Personality. (Psy 443 Personality) (3-0) Credit 3. I or II. Prerequisite: Psychology 123, Advanced General Psychology. Evaluation of theories in the field of personality. The development of personality as a pattern of strivings manifested in interpersonal relation. The covergence of constitutional, psychological, social and cultural factors in the development of the normal individual and his adjustment.

PHILOSOPHY

303. Philosophy of Life. (Phil 303 Phil Life) (3-0) Credit 3. I or II. Designed for those who want to know and understand the main philosophies of life.

313. Introduction to Philosophy. (Phil 313 Introduction) (3-0) Credit 3. I. For beginning philosophy students; methods and theories of the field. Prerequisites: Sophomore standing.

SPECIAL EDUCATION

313. Introduction to the Education of Exceptional Children. (Sp Ed 313 Excep Chld) (3-0) Credit 3. Introduction of the basic concepts and understandings related to developing an overview of the education of exceptional children.

403. Curriculum Building for Mentally Retarded Children. (SpEd 403 Curr Bldg) (3-0) Credit 3. An introduction to basic techniques of curriculum development or implementation with emphasis on mental retardation.

413. Problems and Methods of Teaching Retarded Children. (Sp E. 413 Methods) (3-0) Credit 3. An introductory study of the characteristics and needs of the mentally retarded child with emphasis on basic principles related to methods and techniques of meeting the needs of the retarded child.

433. Psychological Problems of Mentally Retarded Children. (Sp Ed 433 Psy Prob) (3-0) Credit 3. An introduction to the study of special emotional blocks to affect the adjustment of youth who are mentally retarded.

Department of English

The courses in English are designed to give students a broad cultural background, to develop skill in written and spoken composition, to provide

students the means of developing critical ability and artistic taste, and to offer mental and emotional experiences essential to the cultivated human being.

The department offers two programs for majors in English. One is designed primarily for those students preparing to teach on the junior or senior high school level. The other, non-teaching major, is designed to prepare students for many fields of graduate and professional study.

Departmental Ruling on Academic Status: In the interest of maintaining acceptable academic standards, all major and minors in the department of English must maintain an average of "B" in the Junior and Senior courses.

MAJOR REQUIREMENTS

For the degree of Bachelor of Arts with a major in English, thirty-nine hours of English are required, including English 463, the Teaching of English which is counted as education (Education 333). The following courses are required:

English 113 3
Grammar and Composition
English 123 3
Reading and Composition
English 213 3
Fundamentals of Speech
English 233 3
Survey of English Literature
English 333 3
American Literature (1619-1860)
English 343 3
American Literature (1861-Present)
English 353 3
The English Language
English 363 3
Advanced Grammar
English 373 3
Journalism
English 423 3
Shakespeare

The remaining six hours may be selected from the following courses:

English 253 3
Oral Interpretation of Literature
English 383 3
Romantic Movement
English 393 3
Victorian Literature
English 413 3
Eighteenth Century
English 453 3
Medieval Literature
English 473 3
Writing Clinic
English 273 3
Advanced Composition

MINOR REQUIREMENTS

For a minor in English the following courses are required. English 463, The Teaching of English, is also a required course for those desiring teaching certificates.

English 333 3
American Literature
English 353 3
The English Language
English 363 3
Advanced Grammar
English 373 3
Journalism

SUGGESTED FOUR-YEAR PROGRAM IN ENGLISH

FRESHMAN YEAR

First Semester	*Hrs.*	*Second Semester*	*Hrs.*
English 113 Grammar and Composition	3	English 123 Reading and Composition	3
Natural Science 113 College Science	3	Natural Science 123 College Science	3
Mathematics 113 College Algebra	3	Mathematics 123 Trigonometry	3
Foreign Language 113 Elementary Spanish, French or German	3	Foreign Language 123 Elementary Spanish, French or German	3
Social Science 113 Introduction	3	History 173 American History	3
Military Science 112 Elementary	2	Military Science 122 Elementary	2
Physical Education 111 Freshman Practice	1	Physical Education 121 Freshman Practice	1
	16		16

SOPHOMORE YEAR

First Semester	*Hrs.*	*Second Semester*	*Hrs.*
English 213 Fundamentals of Speech	3	English 233 English Literature	3
Foreign Language 213 Advanced Spanish, French or German	3	Foreign Language 223 Advanced Spanish, French or German	3
History 183 American History	3	History 303 England, 1485 to Present	3
Political Science 113 American National Government	3	Political Science 123 American State Government	3
Physical Education 211 Sophomore Practice	1	Physical Education 221 Sophomore Practice	1
Military Science 212 Elementary	2	Military Science 222 Elementary	2
English 273 Advanced Composition	3	English 253 Oral Interpretation of Literature	3
	16		16

JUNIOR YEAR

English 333 American Literature	3	English 343 American Literature	3
English 353 English Language	3	English 363 Advanced Grammar	3
English 373 Journalism	3	English 383 Romantic Movement	3
Education 313 American Public School and Curriculum	3	Elective (Minor)	3
Elective	3	Education 343 Human Development and Learning	3
	15		15

SENIOR YEAR

Elective (Major)	3	Education 406 Student Teaching	6
English 393 Victorian Literature	3	Electives (Minor)	6
English 423 Shakespeare	3		12
English 463 Methods of Teaching English	3		
Education 483 Basic Concepts in Education	3		
	15		

PROGRAM FOR NON-TEACHING OR PROFESSIONAL MAJORS

The English major who does not plan to take a teaching certificate will follow the same program as the teaching major during the freshman and sophomore years. In the junior and senior years the professional major omits the education courses and elects the advanced English courses as per schedule.

DESCRIPTION OF COURSES

113. Freshman Composition. (Eng 113 Composition) (3-0) Credit 3. Various forms of written composition. Designed to develop correct language habits and logical thought in effective writing. Students may be assigned two additional hours a week of writing laboratory based upon English placement score.

123. Freshman Composition. (Eng 113 Composition) (3-0) Credit 3. Forms of written composition with emphasis on the language devices which contribute to the development of a clear, interesting, and forceful style: theme writing; preparation of a fully documental research paper; assigned library readings; individual conferences.

213. Fundamentals of Speech. (Eng 213 Speech Fund) (3-0) Credit 3. I, II. Emphasis upon remedial and corrective elements in training for effective oral communication under realistic conditions. Prerequisite: English 123.

223. Introduction to Literature. (Eng 223 Intro Litr) (3-0) Credit 3. I. II. Reading for understanding and enjoyment; emphasis upon development of

effective reading habits; introduction to basic literary masterpieces and representative modern and contemporary works. Prerequisite: English 123.

253. Oral Interpretation of Literature. (Eng 253 Oral Interp) Fundamentals of English speech applied to the interpretive reading of prose and poetry, including the oral reading of children's literature.

273. Advanced Composition (Eng 273 Adv Comp) Instruction in writing techniques beyond that provided for the general student for advanced college and professional work.

333. American Literature. (Eng 333 Amer Litr) (3-0) Credit 3. Survey of literature with representative selections from chief writers from 1619-1860. Prerequisite: English 213.

343. American Literature. (Eng 343 Amer Litr) (3-0) Credit 3. II. Survey of literature with representative selections from chief writers from 1861 to present. Prerequisite: English 223 or 233.

353. The English Language. (Eng 353 English Lang) (3-0) Credit 3. The nature and development of the English language with emphasis upon sounds, grammar and vocabulary. Prerequisite: English 223 or 233.

363. Advanced Grammar. (Eng 363 Adv Grammar) (3-0) Credit 3. I. An intensive study of modern English grammar from a descriptive point of view, with discussion of levels of usage, the concept of parts of speech, and sources of rules.

373. Journalism. (Eng 373 Journalism) (3-0) Credit 3. I and II. Theory and practice in different forms of modern journalism; practical work.

383. The Romantic Movement. (Eng 383 Romantic Mvt) (3-0) Credit 3. I. Chief literary works of the period with emphasis upon Wordsworths Coleridge, Bryon, Shelley, and Keats. Prerequisite: English 233.

393. Victorian Literature. (Eng 393 Vict Litr) (3-0) Credit 3. Representative selections from leading poets and prose writers of the period. Prerequisite: English 233.

413. Eighteenth Century Literature. (Eng 413 18th Century) (3-0) Credit 3. I. Poetry and prose of the "Neo-Classical" movement, and the "Pre-Romantic" period. Prerequisite: English 233.

423. Shakespeare. (Eng 423 Shakespeare) (3-0) Credit 3. I. General survey of dramatic works; character and conditions of the age; more detailed study of representative plays. Prerequisite: English 233.

453. Medieval Literature. (Eng 453 Medievl Litr) (3-0) Credit 3. II. Major writing and writers of the Medieval Period. Prerequisite: English 233 and 423.

463. Teaching of English (Equivalent to Ed 333) (Eng 463 HS Methods) A study of basic principles and methods and materials in the teaching of English in junior and senior high schools. Prerequisite: Fulfillment of all English requirements.

473. Writing Clinic. (Eng 473 Wrtng Clinic) (3-0) Credit 3. English fundamentals: aims to increase oral and written proficiency.

483. The Novel. (Eng 483 Novel) The development of the English Novel from Defoe through Scott. Its varieties, aims and techniques.

Department of History

MAJOR REQUIREMENTS

History majors are required to present twenty-nine semester hours in History Courses, twenty of which either are required by the department, or are implicit in the departmental requirement by virtue of institutional regulation.

The following History Courses are required of all majors:

143 Survey of Civilization to 1500
153 Survey of Civilization, 1500 to Present
213 The United States, 1492-1837
223 The United States, 1837-1898
313 American Historiography
363 Historical Methods
402 Historical Investigative Paper

The remaining nine hours of History may be selected from the areas and courses listed below in such a way as to provide for the following patterns of concentration, or a combination of courses from all three areas for a general concentration.

a. Contemporary World Interests (Area 1)

353 Europe, 1914 to the Present
373 Problems of Latin America
433 American Foreign Relations, 1775 to the Present
453 Contemporary United States, 1898 to the Present
473 The Far East

b. The American Interest (Area 2)

323 The New South, 1865 to the Present
333 Economic History of the United States
433 American Foreign Relations
463 History of the Negro

c. European Interests (Area 3)

103 Medieval Europe
113 Europe, 1500 to 1815
123 Europe, 1815 to the Present
303 England, 1485 to the Present
353 Europe, 1914 to the Present

The following courses are also required of the History major. These are courses in addition to the specific History and General College Requirements:

163-173 Introduction to Geography
213 Principles of Economics
263 General Sociology

Related courses may be chosen from such allied fields as Political Science, Economics, Sociology, English, or as the advisor may direct. A suggested list of courses which would strengthen the Major program is given below:

213 Political Parties
313 Modern Political Theory
343 Propaganda, Public Opinion and Pressure Groups
453 Labor Problems
463 Modern Economic Thought
303 The Family
323 Race Relations
363 Cultural Anthropology
423 Social Theory
233 English Literature
343 American Literature

For teacher certification, the History major must complete a second program of study consisting of at least twenty-four (24) semester hours in an approved teaching field. To fulfill this requirement, the Department recommends the following approved fields: English and the Modern Languages (French or Spanish). Other approved fields may be selected, however, in consultation with the History Department.

In the interest of maintaining proper academic standards, the Department has ruled that all students majoring or minoring in the Department must maintain in the lower college courses of the Department (Freshman and Sophomore) the average of "C" and in the upper college courses (Junior and Senior) the average of "B".

SECOND TEACHING FIELD IN HISTORY: (Teacher Certification)

For Teacher Certification, a student with a second teaching field in History must satisfactorily complete at least twenty-four (24) semester hours of courses in History. The Department specifically requires that fifteen (15) hours consist of the following courses: History 143, 153, 213, 223, and 383. The remaining nine (9) hours may be selected from the optional interests listed above.

MINOR REQUIREMENTS: (Non-Certification)

A student with a minor in History, who does not wish to be certified for teaching, must satisfactorily complete at least eighteen (18) semester hours of courses in History. The Department specifically requires that twelve (12) hours consist of the following courses: History 143, 153, 213, and 223. The remaining six (6) hours may be selected from the optional interests listed above.

The Integrated Social Science minor program may be selected by students who do not wish to be certified for teaching. This program of study consists of twenty-one (21) semester hours in selected courses from the Departments of History, Economics, Political Science, and Sociology. History 213 and 223 are required for satisfaction of the American History Requirement. An average grade of "C" must be maintained for satisfactory completion of this program.

SUGGESTED PROGRAM FOR HISTORY MAJORS

(Teacher Education Program)

FRESHMAN YEAR

First Semester	*Hrs.*	*Second Semester*	*Hrs.*
History 143 Civilization to 1500	3	History 153 Civilization, 1500 to Present	3
English 113 Grammar and Composition	3	English 123 Reading and Composition	3
Mathematics 173 or 113 Elements of Applied Math or College Algebra	3	Mathematics 183 or 123 Elements of Applied Math or Trigonometry	3
Natural Science 113 College Science	3	Natural Science 123 College Science	3
Political Science 113 National Government	3	Political Science State Government	3
Military Science 112 Elementary (Men)	2	Military Science 122 Elementary (Men)	2
Physical Education 111 Freshman Practice (Men and Women)	1	Physical Education 111 Freshman Practice (Men and Women)	1
	18		18

SOPHOMORE YEAR

First Semester	*Hrs.*
History 213	3
The United States, 1492-1837	
Foreign Language 113	3
Elementary French or German	
Economics 213	3
Principles of Economics	
English 213	3
Public Speaking	
Geography 163-173	3
Introduction to Geography	
Military Science 212	2
Elementary (Men)	
Physical Education 211	1
Sophomore Practice (Men and Women)	
	18

Second Semester	*Hrs.*
History 223	3
The United States, 1837-1898	
Foreign Language 123	3
Elementary French or German	
English 223	3
Introduction to Literature	
Sociology 263	3
General Sociology	
Elective	3
Military Science 222	2
Elementary (Men)	
Physical Education 221	1
Sophomore Practice (Men and Women)	
	18

JUNIOR YEAR

History 383	3
High School Methods and Materials-Social Studies	
Foreign Language 213	3
French or German	
Education 313	3
American Public School	
Military Science 312 (5)	2
(Advanced-Optional)	
History 313	3
American Historiography	
Minor or Elective	3
	15 or 17

History 363	3
Historical Methods (Begin Investigative Paper)	
Foreign Language 223	3
French or German	
Education 343	3
Human Development and Learning	
Military Science 324	4
(Advanced-Optional)	
History (Advanced)	3
Minor or Elective	3
	15 or 19

SENIOR YEAR

History 402	2
(Investigative Paper)	
Education 483	3
Basic Concepts in Education	
Military Science 414	4
(Advanced-Optional)	
History (Advanced)	3
Minor and/or Electives	3-6
	14 or 18

History (Advanced)	3
Education 406	6
Military Science 422 (5)	2
(Advanced-Optional)	
Minor and/or Electives	3-6
	15 or 17

SUGGESTED PROGRAM FOR HISTORY MAJORS

(Non-Teaching Program)

FRESHMAN YEAR

History 143	3
Civilization to 1500	
English 113	3
Grammar and Composition	
Mathematics 173 or 113	3
Elements of Applied Math or College Algebra	
Natural Science 113	3
College Science	
Political Science 113	3
National Government	
Military Science 112	2
Elementary (Men)	
Physical Education 111	1
Freshman Practice (Men and Women)	
	18

History 153	3
Civilization, 1500 to Present	
English 123	3
Reading and Composition	
Mathematics 183 or 123	3
Elements of Applied Math or Trigonometry	
Natural Science 123	3
College Science	
Political Science 123	3
State Government	
Military Science 122	2
Elementary (Men)	
Physical Education 111	1
Freshman Practice (Men and Women)	
	18

SOPHOMORE YEAR

First Semester	*Hrs.*	*Second Semester*	*Hrs.*
History 213	3	History 223	3
The United States, 1492-1837		The United States, 1837-1898	
Foreign Language 113	3	Foreign Language 123	3
Elementary French or German		Elementary French or German	
Economics 213	3	Economics 223	3
Principles of Economics		Economic Problems	
English 213	3	English 223	3
Public Speaking		Introduction to Literature	
Geography 163-173	3	Sociology 263	3
Introduction to Geography		General Sociology	
Military Science 212	2	Military Science 222	2
Elementary (Men)		Elementary (Men)	
Physical Education 211	1	Physical Education 211	1
Sophomore Practice (Men and Women)		Sophomore Practice (Men and Women)	
	18		18

JUNIOR YEAR

History 313	3	History 363	3
American Historiography		Historical Methods	
		(Begin Investigative Paper)	
Foreign Language 213	3	Foreign Language 223	3
French or German		French or German	
Military Science 312 (5)	2	Military Science 324	4
(Advanced-Optional)		(Advanced-Optional)	
History (Advanced)	3	History (Advanced)	3
Minor and/or Electives	3-6	Minor and/or Electives	3-6
	15 or 17		15 or 19

SENIOR YEAR

History 402	2	History (Advanced)	6
Investigative Paper		Military Science 422 (5)	2
Military Science 414	4	(Advanced-Optional)	
(Advanced-Optional)		Minor and/or Electives	6-9
History (Advanced)	3		15 or 17
Minor and/or Electives	6-9		
	14 or 18		

DESCRIPTION OF COURSES

EUROPEAN HISTORY

103. Medieval Europe. (Hist 103 Medieval) (3-0) Credit 3. Europe from the fall of Rome to 1500; lectures, special reports, selected readings; open on demand; consent of instructor.

113. Europe 1500-1815. (Hist 113 Europe 1500) (3-0) Credit 3. I. Europe from the Protestant Reformation to the Congress of Vienna. (Lectures, notebooks, quiz section; open to demand.)

143. Survey of Civilization, to 1500. (Hist 143 Civilization) (3-0) Credit 3. Ideals and institutions connected with the political, social and economic life during periods of Greece, Rome, Feudalism, Renaissance, Reformation. Lectures, reading, test, special reports, and clinics.

153. Survey of Civilization, 1500 to Present. (Hist 153 Civilization) (3-0) Credit 3. Ideals and institutions with political, social and economic life in the period of rational liberalism and nationalism, the French Revolution, Nineteenth Century English Liberalism, nationalistic unification, socialism, imperialism, and Twentieth Century Fascism and Democracy. Lectures, Readings, Tests, and special reports, clinics.

303. England, 1485 to the Present. (Hist 303 England) (3-0) Credit 3. II. Modern Britain from the Tudors to the Present. (Lectures, discussions, special reports.) Offered in odd years. Junior standing or consent of the instructor.

123. Europe, 1815-1914. (Hist 123 Europe 1815) (3-0) Credit 3. II. Europe from the fall of Napoleon to World War I. (Lectures, notebooks, quiz sections. Open on demand.)

353. Europe 1914 to the Present. (Hist 353 Europe 1914) (3-0) Credit 3. I. Twentieth Century Europe in its world revolutionary setting. (Five lectures: the Heritage, Religion, Education, Big Government, Economic Nationalism.) Discussions, special reports. Offered in odd years. Junior standing or consent of the instructor.

AMERICAN HISTORY

213. The United States, 1492-1837. (Hist 213 the U. S.) (3-0) Credit 3. I. American Development from the period of discovery to the close of the Jackson Presidency. Lectures, discussions, special maps and written reports; offered first semester yearly. Sophomore standing. Required of all majors and minors, or the other Social Sciences.

223. The United States, 1837-1898. (Hist 223 the U. S.) (3-0) Credit 3. II. Prerequisite: History 213. Surveys period of Bourgeoise revolution and rise of group democracy in America. (Lectures, discussions, special map and written reports; offered second semester yearly.) Sophomore standing. Required of all majors and minors, or the other Social Sciences.

323. The New South, 1865. (Hist 323 New South) (3-0) Credit 3. II. Relation of the South to national development since 1860. (Lectures, discussions, special reports. Junior standing. Offered in even years.) (May be taken in lieu of 183.)

333. Economic History of the United States, 1492 to Present. (Hist 333 Econ Hist) (3-0) Credit 3. I. Surveys agriculture, commerce, industry, banking, business organization and labor. Prerequisites: Six hours of Economics or History 213 and 223. (Lectures, discussions, special reports. Junior standing. Offered on demand.)

433. American Foreign Relations, 1775 to Present. (Hist 433 Foreign Rltn) (3-0) Credit 3. Diplomatic aspects of the United States with reference to political background, emergence as a world power, neutrality, isolation, expansion, adjustment, Caribbean and Pacific interest, world leadership. Lectures, forums, special reports and discussions. (May be taken in lieu of 183).

453. Contemporary United States, 1898 to Present. (Hist 453 Contemp U. S.) (3-0) Credit 3. II. Survey of 20th Century American development. Lecture discussions, special reports. Prerequisite: 12 hours of history or consent of instructor. (May be taken in lieu of 183).

463. History of the Negro in America. (Hist 463 Negro) (3-0) Credit 3. I or II. African background. Slavery, Freedom and Freeman; minority techniques in the contribution to American life. Prerequisite: Upper College status.

REQUIRED COURSES IN AMERICAN HISTORY

(Not for History Majors and Minors)

History 173. The United States, 1491-1876. (Hist 173 U. S., 1492) Credit 3. I. American Development from the period of discovery to the close of the Civil War; The Colonial Era; Birth of a Nation; The Young Republic; Westward Expansion; Sectionalism, Civil War and Reconstruction. Lectures, special readings, discussions, supervised study and tests. Degree requirement.

History 183. The United States, 1877 to the Present. (Hist 183 U. S. 1877) (3-0) Credit 3. II. Prerequisite, History 273 or consent of the Department. Surveys Modern American Development; The Industrial Nation and Its Problems; Expansionist and Muckraker; The First Crusade Normalcy and Reaction, Depression and the New Deal; The Second World War and After. Lectures, special readings, discussions, supervised study and tests. Degree requirement. (Either 323, 433, 453, or 463 may be substituted for this course).

SPECIAL AND REQUIRED COURSES

313. American Historiography. (Hist 313 Amer Histrns) (3-0) Credit 3. Survey of the Writing of American History with emphasis on the social-intellectuals motivations and historical theory. Lectures, discussions, independent study, special reports. Junior status.

363. Historical Methods. (Hist 363 Histl Meth) (3-0) Credit 3. II. Historical Theory and Techniques and the relation of History to Allied Social Sciences. (Lectures, laboratory exercises, special reports. Required of all majors. Prerequisite: Junior Standing).

373. Problems in Latin American History. (Hist 373 Latin Amer) (3-0) Credit 3. I. Seminar. Special problems in specific time areas. Advanced junior or senior status. Special research reports.

383. (Education 333) Methods of Teaching History and Other Social Studies in Secondary Schools. (Hist 383 HS Methods) (3-0) Credit 3. The nature of the Social Studies; the development and changing emphasis in current social studies programs; purposes and values; classroom methods and materials. Lectures, projects (readings, test and laboratory experiences; offered both semesters yearly, junior standing or above; required of all majors and minors seeking teacher certification.

402. Historical Investigative Paper. (Hist 402 Inves Paper) (2-0) Credit 2. II. Open to advanced Juniors and Seniors. Required of all majors in History for graduation credit; allowed upon satisfactory completion of proposed study agreed upon in consultation with advisor.

473. History of the Far East. (Hist 473 Far East) (3-0) Credit 3. Political institutions of China, Japan and other Far Eastern Countries.

Department of Library Service-Education

The courses in this department are designed to achieve the following objectives. (1) prepare school librarians and teacher-librarians for the public schools of Texas in keeping with the accrediting standards of the state; (2) acquaint future teachers and future school administrative officials with the need for and the function of school libraries in modern education; (3) lay the foundation for graduate work in library service; and, (4) inspire students to develop an appreciation for the value of books and non-book materials as sources of information, reliable knowledge, inspiration, culture, and recreation.

Under the regulations of the Texas Education Agency those who choose to secure a provisional certificate in the field of library service-education shall complete, satisfactorily, the following requirements:

1. Some 55 semester hours of credit in the area of Academic Foundations;
2. Forty-eight semester hours in the area of Academic Specialization including 24 semester hours credit in each of two teaching fields;
3. Eighteen semester hours in professional education including student teaching;
4. Free electives;
5. Special proficiencies outlined by the Central Teacher Education Council.

Library majors are required to select their alternate teaching field (24 semester hours) with the assistance of their departmental advisor and with the head of the department in which the alternate teaching field lies.

Students wishing to select library service-education as an alternate teaching field will be required to complete, satisfactorily, 24 semester hours credit in this department.

Students who are not qualifying for teacher certification and who wish to minor in library service-education are required to complete, satisfactorily, at

least 18 semester hours in library service-education including the following courses: 213, 223, 313, 323, 333, and 383.

Courses 213, 223, 313, 333, 363 and 383 are suggested as free electives to those students who wish to receive some understanding of and proficiency in library methods.

Students are advised to become thoroughly acquainted with the graduation requirements in their major areas of study. They should check with their advisors early about any deficiencies they may have in their programs and take steps to correct them at the earliest possible time.

Proficiency in typing is required of those who select library service-education as a teaching field.

To maintain the proper academic standards it has been decided by the department that all students undertaking study in library service-education must maintain an average grade of "C" in the Freshman and Sophomore years and an average grade of "B" during the Junior and Senior years.

SUGGESTED PROGRAM OF STUDY

FRESHMAN YEAR

First Semester	*Hrs.*	*Second Semester*	*Hrs.*
English 113 Grammar and Composition	3	English 123 Reading and Composition	3
History 173 American History	3	History 183 American History	3
Mathematics 113 or 173 Elements of Applied Mathematics or College Algebra	3	Mathematics 123 or 183 Elements of Applied Mathematics or Trigonometry	3
Natural Science 113 College Science	3	Natural Science 123 College Science	3
Foreign Language 113 Elementary French, German or Spanish	3	Foreign Language 123 Elementary French, German or Spanish	3
Physical Education 111 Freshman Practice	1	Physical Education 121 Freshman Practice	1
Military Science 112 (Men) Elementary	2	Military Science 122 (Men) Elementary	2
	16 or 17		16 or 17

SOPHOMORE YEAR

Social Science Elective*	3	Library Science 223 Children's Literature and Non-Book Materials	3
Library Science 213	3	Library Science 313 Administration of School Libraries	3
English 213 Public Speaking	3	English 223 Introduction to Literature	3
Foreign Language 213 French, German or Spanish Reading and Grammar Review	3	Business Administration 132 Typing	2
Political Science National Government	3	Foreign Language 223 Reading and Grammar Review	3
Physical Education 211 Sophomore Practice	1	Political Science 123 State Government	3
Military Science 212 (Men) Elementary	2	Physical Education 221 Sophomore Practice	1
		Military Science 222 (Men) Elementary	2
	16 or 17		18 or 19

JUNIOR YEAR

Library Science 363 Young People's Literature and Non-Book Materials	3	Education 343 Human Development and Learning	3
Other Teaching Field	6	Library Science 323 Cataloging and Classification	3
Library Science 333 School Library Reference Materials and Tools	3	Education 333 Methods of Teaching	3
Education 313 American Public School	3	Other Teaching Field	6
Elective (Free)	2	Elective (Free)	2
	17		17

*Economics, Fine Arts, Geography or Sociology.

SENIOR YEAR

First Semester	*Hrs.*
Library Science 383	3
Selection of Library Materials	
Education 483	3
Basic Concepts in Education	
Other Teaching Field	6
Elective (Free)	3
	15

Second Semester	*Hrs.*
Library Science 343	3
Experience Work	
Education 406	6
Practice Teaching	
Other Teaching Field	6
	15

DESCRIPTION OF COURSES

LIBRARY SERVICE-EDUCATION

213. The Library in the School (LbSc 213 Sch Libr) (3-0) Credit 3. I. Introduction to libraries and librarianship; rise and growth of the school library and its role in the school program; library services to students and teachers; instruction and practical experiences in use of the library.

223. Children's Literature and Non-Book Materials. (LbSc 223 Child Litr) (3-0) Credit 3. II. Survey of children's books and related materials, illustrators, and publishers. Emphasizes reading interests of children, types and development of the literature, methods and materials used to stimulate their reading interest.

313. Administration of School Libraries. (LbSc 313 Libr) (3-0) Credit 3. I. Library service as related to the school's objectives and programs; selection and acquisition of library materials; organization and administration of libraries and library service; professional aspects of librarianship.

323. Cataloging and Classification. (LbSc 323 Cataloging) (3-0) Credit 3. II. Cataloging and classification of school library materials; accounting procedures. Prerequisite: L. S. Ed. 313

333. School Library Reference Materials and Tools. (LbSc 333 References) (3-0) Credit 3. II. Various types of school reference materials and tools; reference methods and techniques of reference services; organization for reference services.

343. Experience Work in Library Methods (LbSc 343 Libr Methods) (3-0) Credit 3. I, II. Prerequisite: All theory courses.

363. Young People's Literature and Non-Book Materials. (LbSc 363 Adol Litr) (3-0) Credit 3. I. A study of current adolescent literature and non-book materials, reading interests and habits of youth, reading guidance, and methods of promoting library use among high school students.

383. Selection of Library Materials. (LbSc 383 Selection) (3-0) Credit 3. I. Study and evaluation of books, periodicals, and other library materials selected for the school library; use and care of non-book materials; principles of selection; book reviewing; publishers and publishing.

Department of Mathematics

The objectives of the Department of Mathematics are (1) to assist students in developing the orderliness of thought and precision of expression universally found in mathematics; (2) to serve the mathematical needs of other schools and departments of the college; (3) to prepare prospective teachers of mathematics; (4) to train professional mathematicians for careers in private industry and governmental services.

For the degree of Bachelor of Science with a major in Mathematics, ten courses of Mathematics are required, which includes the following required

courses: Mathematics 213, 125, 214, 224, and 413. In addition, the student may select any 5 courses on the 300 and 400 levels excluding 353.

A minor in mathematics consists of seven courses of mathematics which includes the following required courses: Mathematics 213, 125, 214, and 224. In addition, the student may select any 3 courses on the 300 and 400 levels. Minors are urged to take Mathematics 353 if they plan to teach Mathematics in the public school.

All mathematics courses for majors and minors must be taken in the proper sequence, with at least a grade of C. Only grades of C and above can be counted toward either a major or minor in mathematics.

All mathematics majors are given a mathematics placement test. (The same applies to minors). Students are placed according to scores attained on these placement tests. Those students who score exceptionally high are encouraged to take the Advanced Standing Examinations.

SUGGESTED PROGRAM FOR PROSPECTIVE TEACHERS OF MATHEMATICS

FRESHMAN YEAR

First Semester	*Hrs.*	*Second Semester*	*Hrs.*
Foreign Language 131	3	Foreign Language 123	3
Elementary French or German		Elementary French or German	
English 113	3	English 123	3
Grammar and Composition		Grammar and Composition	
Natural Science 113		Natural Science 123	
College Science or		College Science or	
Physics 214		Physics 224	
General Physics or		General Physics or	
Chemistry 114		Chemistry 124	
Inorganic Chemistry	3-4	Inorganic Chemistry	3-4
Mathematics 115 or 213	3-5	Mathematics 125	5
Mathematics 162	2	Social Science 113	3
Physical Education	1	Introduction to Social Sciences	
Physical Education Practice		Physical Education	1
Military Science 112	2	Physical Education Practice	
Elementary (Men)		Military Science 122	2
	19	Elementary (Men)	
			19

SOPHOMORE YEAR

Mathematics 214	4	Mathematics 224	4
Political Science 113	3	Political Science 123	3
National Government		State Government	
Foreign Language 213	3	Foreign Language 223	3
Reading and Grammar Review		Reading and Grammar Review	
English 213	3	English 223	3
Public Speaking		Introduction to Literature	
Minor	3	Minor	3
Physical Education 211	1	Physical Education 221	1
Physical Education Practice		Physical Education Practice	
Military Science 212	2	Military Science 222	2
Elementary (Men)		Elementary (Men)	
	19		19

JUNIOR YEAR

Mathematics 413	3	Mathematics 423	3
Differential Equations		Differential Equations	
Mathematics 401	1	Mathematics 401	1
Mathematics Colloquium		Mathematics Colloquium	
History 173	3	Mathematics 333	3
American History		College Geometry	
Electives (Minor)	6	Mathematics 353	3
Education 313	3	Methods of Teaching Mathematics in High School	
American Public School Educ.		Education 343	3
Military Science 312	2	Human Development and Learning	
Advanced (Men)		Electives (Minor)	3
	18	Military Science 324	4
		Advanced (Men)	
			20

SENIOR YEAR

First Semester	*Hrs.*	*Second Semester*	*Hrs.*
Mathematics 483 Linear Algebra	3	Education 406 Practice Teaching	6
Mathematics 401 Mathematics Colloquium	1	Minor	6
Mathematics 163 Introduction Computer Programming	3	Elective	3
Education 483 Basic Concepts in Education	3		15
Electives (Minor)	3		
Military Sciences 414 Advanced (Elective) (Men)	4		
	17		

SUGGESTED PROGRAM FOR NON-TEACHERS IN MATHEMATICS

FRESHMAN YEAR

Foreign Language 113 Elementary French of German	3	Foreign Language 123 Elementary French or German	3
English 123 Grammar and Composition	3	English 123 Grammar and Composition	3
Physics 214 General Physics or		Physics 214 General Physics or	
Chemistry 114 Inorganic Chemistry	4	Chemistry 114 Inorganic Chemistry	4
Mathematics 213 or 115	3-5	Mathematics 125 or 213	3-5
Physical Education 111 Physical Education Practice	1	Physical Education 121 Physical Education Practice	1
Military Science 112 Elementary (Men)	2	Military Science 122 Elementary (Men)	2
Mathematics 162 Introduction Computational Processes	2	Political Science 113 National Government	3
	16 or 18		17 or 19

SOPHOMORE YEAR

Mathematics 214	4	Mathematics 224	4
Political Science 123 State Government	3	History 173 U. S. 1492 to 1876	3
Foreign Language 213 Reading and Grammar Review	3	Foreign Language 223 Reading and Grammar Review	3
English 213 Public Speaking	3	English 223 Introduction to Literature	3
Physics 214 General Physics	4	Physics 224 General Physics	4
Physical Education 211 Physical Education Practice	1	Physical Education 221 Physical Education Practice	1
Military Science 212 Elementary (Men)	2	Military Science 222 Elementary (Men)	2
	19		19

JUNIOR YEAR

Mathematics 163	3	Mathematics 423 Differential Equations	3
Mathematics 413 Differential Equations	3	Mathematics 401 Mathematics Colloquium	1
Mathematics 401 Mathematics Colloquium	1	Mathematics 363 Numerical Analysis	3
History 183 American History	3	Social Science 113 Introduction to Social Science	3
Physics or Chemistry	4-5	Physics or Chemistry	4-5
	15		15

SENIOR YEAR

Mathematics 373 Linear Algebra	3	Mathematics 463 Probability and Statistical Applications	3
Mathematics 433 Elementary Statistics	3	Mathematics 401 Mathematics Colloquium	1
Mathematics 401 Mathematics Colloquium	1	Minor	6
Electives	6	Electives	6
Minor	3		16
	16		

DESCRIPTION OF COURSES

113. College Algebra. (Math 113 Algebra) (3-0) Credit 3. I or II. The theory of quadratic equations, systems of equations, logarithms, exponential and logarithmic equations, binomial theorem, progressions, permutations, combinations, and probability.

123. Trigonometry. (Math 123 Trigonometry) (3-0) Credit 3. I, II. Trigonometry functions: radians, logarithms; solutions of triangles; functions of composite angles; identies; trigonometric equations. Prerequisite: Math 113.

162. Introduction of Computational Processes. (Math 162 Comput Proc) (2-0) Credit 2. History of calculating machines and methods of computing; the abacus, tables, and formulas, the slide rule, desk calculators, digital computers, application of these machines to trigonometry, logarithms, roots and powers, correlations, evaluation of statistical formulas, business and other arithmetic processes; description of basic digital computers, methods of writing programs for computers in particular the 1401 computer.

163. Introduction to Computer Programming. (Math 163 Computr Prog) (3-0) Credit 3. Description and applications of basic digital computers; operions and methods of programming digital computers; developing and testing programs for the IBM 1401 computer; programming examples; programming techniques applied to simple mathematical problems; 2 hours lecture per week; 2 hours programming per week. Prerequisite: 1 year College Mathematics.

173-183. General College Mathematics. (Math 173-183 Applied) (3-0) Credit 3. I and II. Graphical methods, simple equations; exponents and radicals, logarithms, progressions, interest and annuities, numerical trigonometry. Especially designed for those students majoring in fields other than mathematics, the physical sciences, the natural sciences, and engineering.

115. College Algebra and Trigonometry. (Math 115 Algebra Trig) (5-0) Credit 5. I. A Basic course in mathematics for engineering students, including algebra and trigonometry. Topics included are: linear, quadratic and higher degree polynomial functions and identities. Combinatorial formulas probability, determinants and systems of linear equations, inverse trigonometric functions, trigonometric equations.

125. Analytic Geometry with Calculus. (Math 125 Anal Calc) (5-0) Credit 5. II. Real number system, equations and graphs, the straight line, slope, the conic section, limits, functions, elementary differentiation, and integration.

213. Analytical Geometry. (Math 213 Analyt Gem) (3-0) Credit 3. I. The straight line and conic sections; transformation of coordinates; polar coordinates; parametric equations; introduction to solid analytic geometry. Prerequisite: Mathematics 123.

214. Analytical Geometry with Calculus. (Math 214 Anal Calc) (4-0) Credit 4. III. General methods of integration and applications of the indefinite integrals to problems in physics and geometry. Prerequisite: Mathematics 125.

224. Analytical Geometry with Calculus. (Math 224 Anal Calc) (4-0) Credit 4. A continuation of 214. Further applications of the definite integral, power series with applications; definition and meaning of partial derivatives; hyperbolic functions, multiple integrals; and introduction to differential equations. Prerequisite: Mathematics 214.

263. Structure of the Number System. (Math 263 Structure) (3-0) Credit 3. The language and nature of deductive reasoning; elements of Set Theory; whole numbers; number lines; rational numbers; numeration system; number patterns; number bases.

273. Fundamentals of Algebra. (Math 273 Fund Algebra) (3-0) Credit 3. Properties of real numbers; linear equations; system of equations; quadratic equations; inequalities; graphs; functions; problem solving; complex numbers.

283. Informal Geometry. (Math 283 Inf Geometry) (3-0) Credit 3. Experimental and informal geometry; sets; points; linear planes and space; elementary theorems and proofs; construction and measurements of angles and segments; length; areas; volumes; congruencies.

333. College Geometry. (Math 333 Coll Geom) (3-0) Credit 3. Review of the real number system, distance and congruence, three different geometries, angular measure, geometric inequalities, construction with ruler and compass, Euclidean postulates, hyperbolic geometry, hyperbolic postulates. Prerequisite: Mathematics 214.

353. Methods of Teaching Mathematics in High School. (Math 353 HS Meth) (3-0) Credit 3. II. See Department of Education (Education 333C).

363. Numerical Analysis. (Math 363 Num Analysis) (3-0) Credit 3. Programs for desk calculators and digital computers. Approximate numbers; iterative processes; interpolation; inversion of matrices; numerical differentiation and integration; error analysis.

373. Linear Algebra. (Math 373 Lin Algb) (3-0) Credit 3. The real number system, vectors, matrices, linear equations; polynomials and complex numbers, vector spaces and linear transformations, vector spaces with an inner product. Prerequisite: Mathematics 214.

401. Mathematics Colloquium. (Math 401 Colloquium) (1-0) Credit I. Detailed reports on selected high level topics in both theoretical and applied mathematics; students majoring in the departments are required to report on at least one topic of a moderate degree of difficulty as a demonstration of their resourcefulness, ability, and achievement in the field of mathematics. Required of all majors in the mathematics department. 2 years.

403. Independent Study (Algebra and Geometry) (Math 403 Independent) (3-0) Credit 3. This course is designed to encourage and permit those students who are able and willing to pursue advanced topics in Mathematics with little or no assistance from the staff. Prerequisites: Consent of the instructor; at least four courses in the Mathematics sequence with at least a 3.0 average in these courses and lot less than a 2.0 academic average.

413. Differential Equations. (Math 413 Diff Equatns) (3-0) Credit 3. Classifications and solutions of homogeneous, exact and general first order differential equations; a thorough study of first order linear equations; second order linear differential equations with constant coefficients; linear differential operator; system of differential equations; applications. Prerequisite: Mathematics 224 (can be taken simultaneously with Math 413.)

423. Differential Equations. (Math 423 Diff Equatns) (3-0) Credit 3. Second order linear differential equations with non-constant coefficients; solutions in series; introduction to partial differential equations; LaPlace transform; non-linear differential equations; numerical solution of differential equations; Fourier series. Applications. Prerequisite: Mathematics 413 and 224.

433. Elementary Statistics. (Math 433 Statistics) (3-0) Credit 3. Collection and tabulation of data; bar charts; graphs; sampling, averages; dispersions; correlation; index numbers; normal curve; probability; applications to various fields. Prerequisite: one semester of college mathematics.

443. Independent Study (Analysis and Differential Equations) (Math 443 Independent) (3-0) Credit 3. This course is designed to encourage and permit those students who are able and willing to pursue advanced topics in Mathematics with little or no assistance from the staff. Prerequisites: Con-

sent of the instructor; at least four courses in the Mathematics sequence with at least a 3.0 average in these courses and not less than a 2.0 academic average.

453. Foundations of Mathematics. (Math 453 Foundations) (3-0) Credit 3. The axiomatic method and its place in the foundations; elements of the theory of sets; the linear continum and the real number system; groups and their significance for the foundations. Prerequisite: Mathematics 214.

463. Probability and Statistics. (Math 463 Probability) (3-0) Credit 3. Counting problems, probability theory in finite sample spaces, random numbers and their uses, random variables, expectations, means, variances, binomial and normal distributions, random walk problems, point estimation, confidence limits, hypothesis, testing, applications of Bayes' theorem, sums of independent random variables, law of large numbers, central limit theorem. Prerequisite: Consent of instructor.

473. Advanced Mathematics for Engineers. (Math 473 Engr Math) (3-0) Credit 3. Matrices; determinants; power series; Fourier series; LaPlace transforms; application of LaPlace transforms to ordinary differential equations; system of ordinary differential equations; applications of LaPlace transforms to partial differential equations; applications to mechanical networks; electrical networks; heat flow. Prerequisite: Math 413 and 423.

493. Advanced Calculus. (Math 493 Adv Calculus) (3-0) Credit 3. Number sequences, limits, sequencial functions, continuity, properties of continuous functions, the indefinite integral, the Riemann integral, properties of the Riemann integral. Prerequisite: Mathematics 413.

Department of Modern Foreign Languages

No major is offered.

The general requirement in modern foreign languages is the equivalent of two years of study in college of one modern foreign language.

This department offers courses in three languages: French, German and Spanish. A student may obtain a minor in French or Spanish. For a minor in language 24 semester hours in one language is required, nine hours of which must be in courses numbered 300 or above, or 303 and 313, (3 semester hours) The Teaching of Modern Foreign Languages in Secondary Schools All students minoring in the department must make a grade of "C" in each course presented for a minor.

The German courses are designed to meet the needs of students desiring to fulfill the language requirement for the Bachelor's degree and beyond. The Modern Foreign Language Department also aims to provide adequate training for those students who desire to acquire proficiency in the use of the language as a tool subject for the professional courses in science, pharmacy, engineering, music, and other fields.

DESCRIPTION OF COURSES

FRENCH

113, 123. Elementary French. (Fren 113 123 Elementary) (3-0) Credit 3. I and II. The linguistic foundation of the French language; mastery of phonetics; verbs, grammar, and idiomatic usage.

213, 223. Intermediate French, Reading and Grammar Review. (Fren 213 223 Intermediate) (3-0) Credit 3. I and II. French conversation, idioms, and verb drill; reading material; principles of French grammar and syntax. Prerequisite: French 123.

303. Composition and Conversation. (Fren 303 Composition) (3-0) Credit 3. Concentrated application of the principles of grammar in oral and written French; conducted in French. Primarily for French minors and students interested in the practical use of French. Prerequisite: French 223 and approval of instructor.

313. Survey of French Literature. (Fren 313 Survey) (3-0) Credit 3. Outline of the history of French literature; literary epoch. Reading materials will be chosen from various periods. Prerequisite: French 303. Required for minors.

323. Introduction to Classic Literature. (Fren 323 Classics) (3-0). Representative selections from the classic period of French literature; reading and reports on Racine, Corneille, etc. Prerequisite: French 313.

383. The Teaching of Modern Foreign Languages in Secondary Schools. (Fren 383 Tch HS Lang) Credit 3. Methods, devices and procedures for teaching foreign languages on the secondary level.

403. Moliere. (Fren 403 Moliere) (3-0) Credit 3. Representative works of Moliere including his life and period are studied. Prerequisite: French 313.

413. Introduction to Romanticism. (Fren 413 Romanticism) (3-0) Credit 3. Representative works of Hugo, Lamartine, Musset, etc., are read. Prerequisite: French 313.

423. French Phonetics and Diction. (Fren 423 Phonetics) (3-0) Credit 3. A practical study of the principal constituents of French pronunciation, articulation and accentuation. The course will be limited to the fundamentals of phonetic theory and will be supplemented by an abundance of practical exercise. Teachers are advised to take the course. Prerequisite: French 303.

SPANISH

113, 123. Elementary Spanish. (Span 113, 123 Elementary) (3-0) Credit 3. I and II. Principles of pronunciation and grammatical construction; easy readings and daily oral practice. Reproduction of materials from diction.

213, 223. Intermediate Spanish, Reading and Grammar. (Span 213, 223 Intermediate) Credit 3. I and II. Grammar review; idioms and idiomatic usage; conversation, practice in reading and translation. Prerequisite: Spanish 123.

303. Composition and Conversation. (Span 303 Composition) (3-0) Credit 3. Salient principles of grammar in written work and in daily conversations. Prerequisite: Spanish 223. For minors and those students who want to acquire functional use of the language. Approval of instructor.

313. Survey of Spanish Literature. (Span 313 Survey) (3-0) Credit 3. A representative novel is used as the basis for classroom reading, translation, discussion, and composition. Prerequisite: Spanish 303.

323. Spanish Prose and Free Composition. (Span 323 Prose) (3-0) Credit 3. A representative novel is used as the basis for classroom reading, translation, discussion, and composition. Prerequisite: Spanish 303.

333. Survey of Spanish Literature from the Golden Age to the present Day; (Span 333 Survey Litr.) Conducted partly in Spanish . Prerequisite: 303.

383. The Teaching of Modern Foreign Languages in Secondary Schools. (Span 383 Tch HS Lang) Credit 3. Methods, devices and procedures for teaching foreign languages on the secondary level.

GERMAN

113, 123. Elementary German. (Ger 113, 123 Elementary) Credit 3. I and II. Ability to pronounce, read and understand simple and easy German; adequate basic vocabulary; fundamentals of grammar.

213, 223. Intermediate German. (Germ 213, 223 Intermediate) Credit 3. I and II. Reading, grammar review; idiomatic German, vocabulary development; selected readings from German newspaper. Prerequisite: German 123.

283. Scientific German. (Germ 283 Scientific) (3-0) Credit 3. May be taken instead of Intermediate German 223. Readings and selected readings from German newspaper. Designed primarily for science majors and those students preparing to enter professional schools and higher institutions of learning. Prerequisite: German 213.

FRENCH TEACHING FIELD

113, 123 Elementary French
213, 223 Intermediate French
303 Composition and Conversation
313 Survey of French Literature
323 Introduction to Classic Literature
(French 323 Classics) (3-0). Representative selections from the classic period of French Literature; Readings and Reports on Corneille, Moliere, Racine, etc. Prerequisite: French 313.
383 The Teachings of Modern Foreign Languages in Secondary Schools. (French 383 Teaching HS Lang) Credit 3. Methods, devices and procedures for teaching foreign languages on the secondary level.
423 French Phonetics and Diction (3-0) Credit 3. A practical study of the principal constituents of French pronunciation, articulation and accentuation. The course will be limited to the fundamentals of phonetic theory and will be supplemented by an abundance of practical exercise: French 303.

SPANISH TEACHING FIELD

113, 123 Elementary Spanish
213, 223 Intermediate Spanish
303 Composition and Conversation
313 Survey of Spanish Literature
323 Spanish Prose and Free Composition
(Spanish 323 Free Composition) (3-0) Credit 3. A representative novel is used as the basis for classroom reading translation, discussion, and prerequisite: Spanish 303.
333 Survey of Spanish Literature from the Golden Age to the Present Day; conducted partly in Spanish; prerequisite: Spanish 303.
383 The Teaching of Modern Foreign Languages in Secondary Schools. (Spanish 383 Tch HS Lang) Credit 3. Methods, devices and procedures for teaching foreign languages on the secondary level.

Department of Music

The Department of Music has planned a program that will provide opportunities for a more thorough recognition of the student's needs and interests, with special efforts to help him discover and develop his potentials and function as a contributing citizen in his community through the following aims:

The Program—

1. To be a vital one functioning in keeping with the present trends of philosophy and practice in music education; providing the educational preparation and technical skill required of those who are planning to become teachers, performers or composers; and having meaning for those who are nonprofessional devotees of music.
2. To develop in the student those musical potenialities which may be latent and not as yet recognized.

3. To provide a more complete integration of music subject matter and other phases of the college curricula, with special emphasis on the inclusion of musical performance in the actual teaching situation.

MAJOR REQUIREMENTS

The degree of Bachelor of Arts with a major in music is offered for the completion of 133 semester hours in the prescribed curriculum of music education with emphasis on one of the applied fields. The minimum music requirement for the degree is 64 hours.

Students must maintain an average of "B" or above in 50 per cent of the music subjects in the freshman and sophomore years, and "B" or above in the entire major field in each of the remaining years.

MINOR REQUIREMENTS

(Second Teaching Field)

For a minor in music 31 hours are required, 8 of which must be applied music. The minor is offered with emphasis upon methods and materials, and theory.

OTHER REQUIREMENTS

All students majoring in music are required to participate in vocal and instrumental organizations. All are required to play the piano of freshman level, regardless of the number of accumulated clock hours.

PERFORMING ORGANIZATIONS

The College Choir, Concert-A Cappella Choir, Band and Orchestras offer excellent opportunities for music participation and expression, and are under direct supervision of teachers of the department. The band is divided into three parts — Concert, Marching, and Military. The Military Band works in conjunction with the Department of Military Science.

OTHER MUSIC ORGANIZATIONS

Music Club
Music Educators National Conference (Student Chapter)
Texas Association of Music Schools
Mu Alpha Sigma Honorary Society

HONORARY SOCIETY

The Mu Alpha Sigma Honorary Society, organized in 1935-36, gives recognition for achievement in meritorous performance, scholarship, research and creative efforts in music, with an accumulative average of "B". Students are elected solely upon the foregoing qualifications, and not upon application for membership.

COURSE SUMMARY OF MUSIC MAJOR REQUIREMENTS

Methods and Conducting	11
Literature and History	6
Theory	23
Education	18
English	12
Foreign Language	12
Mathematics	6
Government	6
History	6
Social Science	3
Applied Music (Group and Individual)	24
Natural Science	6
	133

COURSE SUMMARY OF MUSIC REQUIREMENTS

(Second Teaching Field)

Piano	4
Voice Class	2
Instruments (Orchestra)	4
Theory	10
Methods	6
Conducting	2
Music Literature	3
	31

YEARLY DISTRIBUTION OF SECOND TEACHING FIELD REQUIREMENTS

Freshman Year

Piano	4	
Voice Class	2	6

Sophomore Year

Theory (Aural)	4	
Theory (Written)	4	10
Theory (Keyboard)	2	

Junior Year

Methods	6	
Music Literature	3	9

Senior Year

Instruments (Orchestra) — Group Instruction	4	
Conducting	2	6
		31

FRESHMAN YEAR

First Semester	*Hrs.*	*Second Semester*	*Hrs.*
English 113	3	English 123	3
Grammar and Composition		Reading and Composition	
Mathematics 173	3	Mathematics 183	3
Applied Mathematics		Applied Mathematics	
Political Science 113	3	Political Science 123	3
National Government		State Government	
Music 151	1	Music 161	1
Elementary Keyboard Harmony		Elementary Keyboard Harmony	
Music 152	2	Music 162	2
Elementary Harmony		Elementary Harmony	
Music 172	2	Music 182	2
Elementary Sight Singing		Elementary Sight Singing	
Piano 112, Voice 112 or		Piano 122, Voice 122, or	
Band/Orchestra Instrument 112	2	Band/Orchestra Instrument 122	2
Elementary Applied Music		Elementary Applied Music	
Physical Education 111	1	Physical Education 121	1
Freshman Practice		Freshman Practice	
Military Science 112 (Men)	2	Military Science 122 (Men)	2
Elementary		Elementary	
Music 411	1	Music 421	1
Applied Music Seminar		Applied Music Seminar	
Choir 112	2	Choir 122	2
Choral Practice		Choral Practicee	
	16		16

SOPHOMORE YEAR

First Semester	*Hrs.*
English 213	3
Public Speaking	
Foreign Language 113	3
Elementary French, Spanish or German	
Music 251	1
Advanced Keyboard Harmony	
Music 252	2
Advanced Harmony	
Music 272	2
Advanced Sight Singing	
Piano 212, Voice 212 or Band/Orchestra Instrument 212	2
Intermediate Applied Music	
Music 142	2
Voice Class	
Music 132	2
Strings Class	
Physical Education 211	1
Sophomore Practice	
Military Science 212 (Men)	2
Elementary	
Music 431	1
Applied Music Seminar	
Choir 212	2
Choral Practice	
	17

Second Semester	*Hrs.*
English 223	3
Introduction to Literature	
Foreign Language 123	3
Elementary French, Spanish or German	
Music 261	1
Advanced Keyboard Harmony	
Music 262	2
Advanced Harmony	
Music 282	2
Advanced Sight Singing	
Piano 222, Voice 222, or Band/Orchestra Instrument 222	2
Intermediate Applied Music	
Music 223	3
Music Literature	
Music 132	2
Woodwinds Class	
Physical Education 221	1
Sophomore Practice	
Military Science 222 (Men)	2
Elementary	
Music 441	1
Applied Music Seminar	
Choir 222	2
Choral Practice	
	18

JUNIOR YEAR

Foreign Languae 213	3
Advanced French, Spanish, or German	
Education 313	3
American Public School and Curriculum	
Music 373	3
Elementary School Methods	
Piano 312, Voice 312, or Band/Orchestra Instrument 312	2
Advanced Applied Music	
Music 451	1
Applied Music Seminar	
Choir 312	2
Choral Practice	
Natural Science 113	3
College Science	
History 173	3
United States: 1492-1876	
	17

Foreign Language 223	3
Advanced French, Spanish, or German	
Education 343	3
Human Development and Learning	
Music 383	3
High School Methods	
Piano 322, Voice 322, or Band/Orchestra Instrument 322	2
Applied Music-Advanced	
Music 461	1
Applied Music Seminar	
Choir 322	2
Choral Practice	
Natural Science 123	3
College Science	
History 183	3
United States: 1876-Present	
	17

SENIOR YEAR

Education 483	3
Basic Concepts in Education	
Music 393	3
Instrumental Music Methods	
Social Science 113	3
Introduction to Social Science	
Music 332	2
Conducting	
Music 132	2
Brasses and Percussions	
Music 353	3
Counterpoint	
Piano 412, Voice 412, or Band/Orchestra Instrument 412	2
Choir 412	2
Choral Practice	
Music 471	1
Applied Music Seminar	
	18

Education 303	3
Elementary Practice Teaching	
Education 403	3
High School Practice Teaching	
Music 413	3
Music History	
Choir 422	2
Piano 422, Voice 422, or Band/Orchestra Instrument 422	2
Music 481	1
Applied Music Seminar	
	11

DESCRIPTION OF COURSES

BASIC MUSIC

(012, 022, 032, 042, 052, 062, 072, 082). Basic Music for the Classroom Teacher Through Keyboard Experience. (Music 012-022 Basic) (2-6) Credit 2. I and II. Basic musicianship needed to teach music in the public school through singing and playing in a very simple way, easy songs and games.

Music 151-161. (Music 151, 161 Elem Keybrd) Elementary Keyboard Harmony. 1 hour credit each. I and II. Music Education majors and minors. Courses on the elementary and intermediate levels in functional keyboard performance, including drills in harmonic vocabulary, figured bass realization, sight playing, and fundamentals of improvisation. Prerequisite: Keyboard proficiency equal to persons qualifying to register for Piano 112.

Music 251-261. (Music 251-261 Adv Keybrd) Advanced Keyboard Harmony. 1 hour credit each. I and II. For Music Education majors and minors. Courses on the advanced level in functional keyboard performance, including transposition, modulation; development of skills in clef reading; improvising piano accompaniments to songs of junior, elementary and high school levels. Prerequisite: Keyboard proficiency equal to the completion of Piano 112.

Written Theory 152. Elementary Harmony. (Music 152 Elem Harmony) (2-0) Credit 2. Harmonic phenomena of tones through scales, intervals and chords, and chordal progression; general harmonizations through the secondary triads; keyboard harmony.

Written Theory 162 Elementary Harmony. (Music 162 Harmony) (2-0) Credit 2. Harmonizations through the inversions of the dominant seventh chord; simple harmonic dictation on materials related to the course; analysis of chorales of Bach and simple hymn tunes; keyboard harmony.

Aural Theory 172. Elementary Sight Singing and Ear Training. (Music 172 Sght Sing) (2-1) Credit 2. Drill in aural recognition and vocal execution of scales and intervals; sight reading in the treble and bass clefs; simple melodic dictation in the treble clef.

Aural Theory 182. Elementary Sight Singing and Ear Training. (Music 182 Sight Sing) (2-0) Credit 2. Drill in aural recognition of chords and intervals; the introduction of simple embellishments; vocal execution of technical exercises of moderate difficulty; melodic dictation in the bass and treble clefs.

Written Theory 252. Intermediate Harmony. (Music 252 Adv Harmony) (2-0) Credit 2. Secondary sevenths through the Meapolitian sixth chord, including the analysis of representative materials from the eighteenth and nineteenth centuries; continuation of harmonic dictation; keyboard harmony.

Written Theory 262. Intermediate Harmony. (Music 262 Adv Harmony) (2-0) Credit 2. Augmented sixth chords through chromatic alterations in general; and some modern harmony; analysis of works from the nineteenth and twentieth centuries; harmonic dictation continued; keyboard harmony.

Aural Theory 272. Intermediate Sight Singing and Ear Training. (Music 272 Sight Sing) (2-0) Credit 2. Vocal execution of intervals and embellishments, and melodic and harmonic dictation in the soprano, mezzo-soprano, alto and tenor clefs.

Aural Theory 282. Intermediate Sight Singing and Ear Training. (Music 282 Sight Sing) (2-0) Credit 2. Advanced work in singing intervals and embellishments; melodic and harmonic dictation involving transposition and modulation in all seven clefs.

Music 223. Music Literature (Music 223 Music Lit) The study of the life and works of various composers according to period, style, form, etc. through lectures, research, recordings and actual classroom performances.

Music 411-481. Music Seminar. (Music 411-481 Musc Seminar) (1-0) Credit 1. A meeting, once a week, of each applied music student with his particular applied music teacher along with other applied music students of the teacher for the purpose of performing before each other, and discussing problems pertinent to the special area.

History of Music 413. (Mus 413 History) (3-0) Credit 3. I and II. The great movements in the art of music from the Greek period to the present day.
332. Conducting. (Music 332 Conducting) (2-0) Credit 2. I or II. Baton technique, choral and instrumental conducting in the elementary and high school.

353. Counterpoint. (Music 353 Counterpoint) (3-0) Credit 3. Two, three, and four-part counterpart in all species; invertible counterpoint; canonic imitation and writing in the contrapuntal forms.

APPLIED MUSIC—ELEMENTARY COURSES

Clarinet 112-122. (Music 112 122 Clarinet) (or other Woodwind Instrument) (2-6) Credit 2. I and II. Tone production, embouchure, breathing, scales and articulation; methods of Rubank and Stubbons for clarinet; Weissenborn for bassoon; Rubank and Wagner for flute, and Barret and Gekeler for oboe. Music fee: $12.00.

Cornet 112-122. (or Other Brass Instrument) (Music 112 122 Cornet) (2-6) Credit 2. I and II. Fundamentals of attack; breath control; formation of embouchure; scale, methods of Arban and Goldman for cornet; Anton Horner and Oscar Franz for French horn; Simera-Hovey for trombone, and Rubank for saxophone. Music fee: $12.00.

Violin 112-122. (Music 112 122 Violin) (or Other Stringed Instruments) (2-6) Credit 2. I and II. Major and minor scales and arpeggios, first position methods of Gruenberg and Wohlfahrt for violin; Kummer for violoncello; Primrose for viola, and Butler and Simandl for bass. Music fee: $12.00.

Organ 112-122. (Music 112 122 Oragn) (2-6) Credit 2. I and II. Preparatory manual exercises and pedal techniques; the playing of trios (two manuals and pedals); playing of chorales and preludes, and shorter works for the organ. Organ students must demonstrate ability in piano before admittance to organ classes. Methods of Dickinson and Stainer. Music fee: $5.00 per month.

Piano 112-122. (Music 112 122 Piano) (2-6) Credit 2. I and II. Hannon, The Virtuoso Pianist, Part II; Czerny, The School of Velocity, first half; Bach, Two-Part Inventions; Chopin, Preludes; all major and minor scales in four octaves using double and triple rhythms in various accents. Music fee: $12.00.

Voice 112-122. (Music 112 122 Voice) (2-6) Credit 2. I and II. Study of tone production, breathing flexibility and phrasing. Similar classics in English and from the Italian Anthology. Music fee: $12.00.

INTERMEDIATE COURSES

Clarinet 212-222. (Music 212 222 Clarinet) (or Other Woodwind Instrument) (2-6) Credit 2. I and II. Chromatic scales; sustained tones; broken chords in all keys; etudes for the instrument; tenor clef for the bassoon methods of Magnani, Klose and Rose for clarinet; F. Oubrodous and Weissenborn for bassoon; Marquarre and Popp-Sousman for flute and Barret and Ferling for oboe. Music fee: $12.00.

Cornet 212-222. (Music 212 222 Cornet) (or Other Brass Instrument) (2-6) Credit 2. I and II. Double and triple articulations; legato technique; transposition; methods and studies of Arban, Williams and Clarke for cornet; Koprasch, Oscar Franz and Gallay for French horn; Alban, Cimera and Endresen for trombone, and Pares, Klose and Magnani for saxophone. Music fee: $12.00.

Violin 212-222. (Music 212 222 Violin) (or Other Stringed Instrument) (2-0) Credit 2. I and II. Exercises in charge of position; Rode and Dancla,

Op. 72 Etudes for violin, Spohr Concerto No. 9 for violin; etc. Scales and arpeggios on the viola; three octaves; Gavinies, 24 Etudes for the viola, etc. Duport and Popper Etudes for 'cello; Sonatas by Breval, Sammortini or Eccles for 'cello; Bach, Suite D Minor for 'cello; positions as far as the seventh for the double bass Watson method and Edmon Nanny, exercises for double bass; double bass methods by Simandl, Part II, etc. Music fee: $12.00.

Organ 212-222. (Music 212 222 Organ) (2-6) Credit 2. I and II. A continuation of technical exercises; the extension of repertory through Preludes and Fugues by Bach; work of Guilmant, Carl, Mendelssohn, etc.; use of organ for church and concert purposes. Music fee: $5.00 per month.

Piano 212-222. (Music 212 222 Piano) (2-6) Credit 2, I and II. Hanon, The Virtuosos Pianist completed; Czerny, The School of Velocity completed; Bach, Three-Part Invention; early keyboard music; Chopin, Waltzes; Haydn, Sonatas. Music fee: $12.00.

Voice 212-222. (Music 212-222 Voice) (2-6) Credit 2. I and II. Diatonic and chromatic scales; tone production, vocal embellishments, legato and staccato style; the simple trill; additional songs from a selected list of English songs; selections in Italian and French; an Italian aria from a Mozart opera or another composer of Italian opera; recitatives and areas from such works as "St. Paul," Elijah," and "Messiah." Music fee $12.00.

ADVANCED COURSES

Clarinet 312-322; 412-422; 432-442. (Music 312 322 412 422 432 442 Clarinet) (or Other Woodwind Instrument) (2-12) Credit 2. I and II. Advanced technical studies; repertory, including sonatas and concertos; classical, romantic and modern literature. Music fee: $12.00.

Cornet 312-322; 412-422; 432-442. (Music 312 322 412 422 432 442 Cornet) (or Other Brass Instrument) (2-12) Credit 2. I and II. Advanced technical studies; repertory, including sonatas and concertos; classical, romantic and modern literature. Music fee: $12.00.

Violin 312-322; 412-422; 432-442. (Music 312 322 412 422 432 442 Violin) (or Other Stringed Instrument) (2-12) Credit 2. I and II. Advanced technical studies; repertory including sonatas and concertos; classical, romantic and modern literature. Music fee: $12.00.

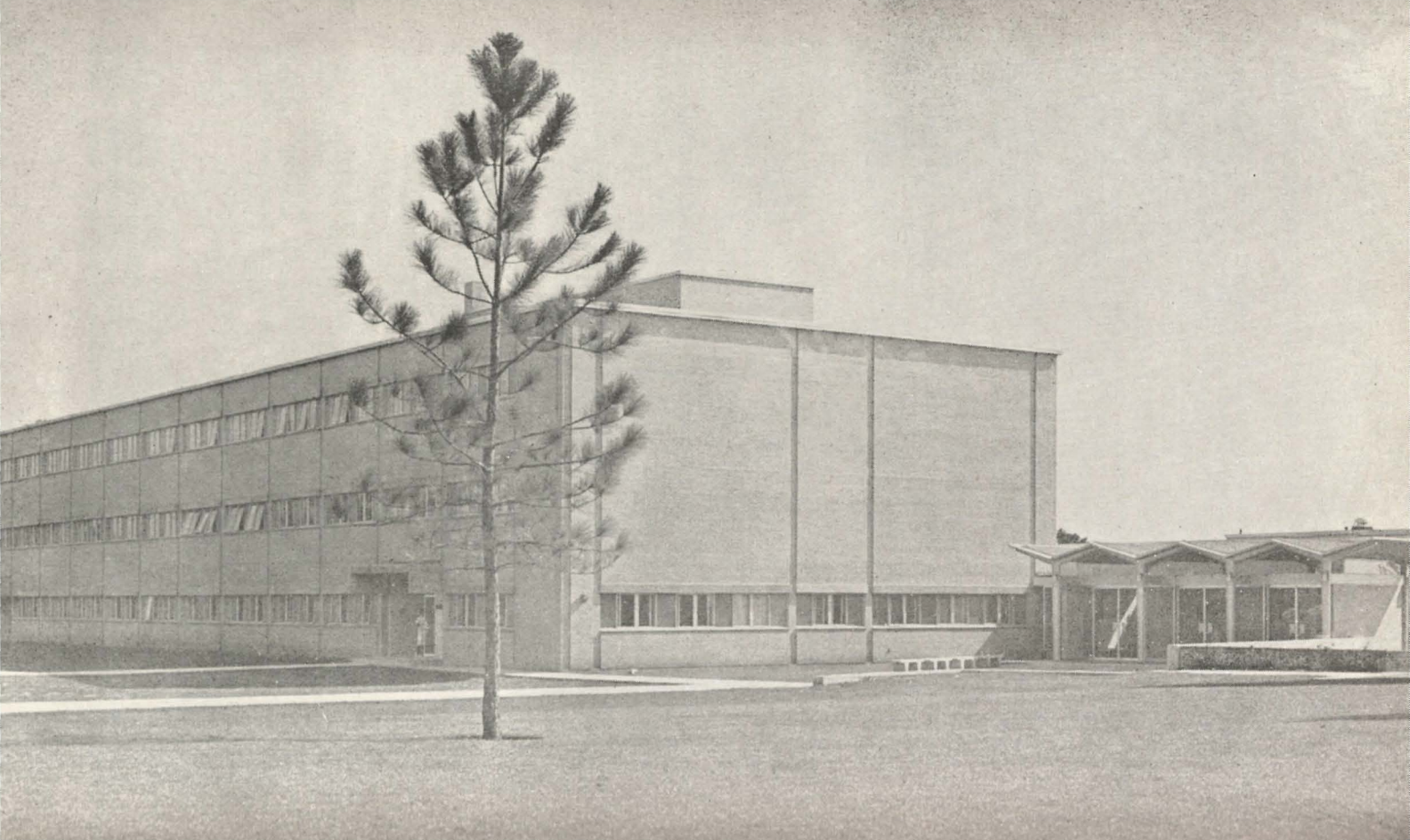
Organ 312-322; 412-422; 432-442. (Music 312 322 412 422 432 442 Organ) (2-12) Credit 2. I and II. Advanced technical studies; service playing, extemporization; repertory, including chorales, sonatas, selected symphonic movements and concertos; classical, romantic and modern literature. Music fee: $5.00 per month.

Piano 312-322; 412-422; 432-442. (Music 312 322 412 422 432 442 Piano) (2-12) Credit 2. I and II. Advanced technical studies including Czerny, The Art of Finger Dexterity; Beethoven, Sonatas; Chopin, Etudes and Ballades; Bach, The Well-Tempered Clavichord, The English Suites and The French Suites; repertory, including solos and concertos of classical, romantic and modern composers. Music fee: $12.00.

Voice 312-322: 412-422; 432-442. (Music 312 322 412 422 432 442 Voice) (2-12) Credit 2. I and II. Advanced technical studies; repertory, including oratorio and opera recitatives and arias in English, Italian, French and German; classical, romantic and modern literature. Music fee: $12.00.

METHODS AND MATERIALS

Brasses 132. (Group Instruction) (Music 132 Brasses) (2-6) Credit 2. I and II. Fundamental technique for playing the brass instruments as an aid in understanding how to organize bands and orchestras in the elementary and high school.



Percussion 132. (Group Instruction) (Music 132 Percussion) (2-6) Credit 2. I or II. Fundamental technique for playing the percussion instruments as an aid in understanding how to organize bands and orchestras in the elementary and high school.

Strings 132. (Group Instruction) (Music 132 Strings) (2-6) Credit 2. I or II. Fundamental technique for playing the stringed instruments as an aid to understanding how to organize orchestras in the elementary and high school.

Woodwinds 132. (Group Instruction) (Music 312 Woodwinds) (2-6) Credit 2. I or II. Fundamental technique for playing the woodwind instruments as an aid in understanding how to organize bands and orchestras in the elementary and high school.

142. (Voice Class) (Music 142 Voice Meth) (2-6) Credit 2. I or II. Basic principles and problems in voice instruction as related to groups as well as the individual with emphasis on the participation approach.

253-263. Elementary School Methods. (Music 253-263 Elem Methods) (Elementary Education Majors) (6-0) Credit 6. (Both semesters). Grade school music methods and materials, care and development of the child voice.

373. (Supervision and Administration of Grade School Music) (Music 373 Grade School) (3-0) Credit 3. I or II. Evaluative criteria of music teaching and supervision in junior and senior high school.

383. Teaching Music in Hogh Schools. See Education 333, Teaching High School Subjects.

393. Instrumental Music Education. (Music 393 Instrmntl) (3-0) Credit 3. I or II. Evaluation of current principles and procedures in the teaching of instrumental music in the elementary and high school including methods of instruction and organization of materials.

MUSIC ENSEMBLES

Choir 112-142, 212-242, 312-342, 412-442. (Choral Practice) (Choir 112, 122, 132, 142, 212, 222, 232, 242, 312, 322, 342, 412, 422, 432, 442). College Choir. (½-4) Credit 2. I and II. All four years. Sacred and secular choral music, cantatas and oratorios — offering excellent practical opportunities for expression in part singing. A cappella and accompanying singing.

111, 121, 211, 221, Military-Concert Band) (Music 111, 121, 211, 221) (1-4) Credit 1. I and II. All four years. A military concert organization for concert and military music. Experience in advanced band literature.

420. (String Ensemble) (Music 420 Ensemble) (0-6) No Credit. I or II. A small ensemble serving as the nucleus for the symphony orchestra.

Department of Natural Sciences

The Department of Natural Sciences includes Biology, Chemistry, Physics and College Science. Each section has a chairman and its respective requirements for major and minor students.

The department offers courses designed to prepare students for industry, the teaching profession, preprofessional studies in the medical sciences and other sciences which require a scientific background. Credits earned here are accepted by all class A medical schools.

NEW M. T. HARRINGTON SCIENCE BUILDING . . . Named in honor of the former A&M Chancellor because of his keen interest in Prairie View and its program of Science in particular . . . Contains the latest equipment in science, laboratories and classrooms. Houses the Head of the Department of Natural Science and the Science teaching Staff.

PRE-PROFESSIONAL STUDIES IN THE MEDICAL SCIENCES

Students who plan careers in Medicine, Dentistry, Veterinary Medicine or any of the Medical sciences are advised to take the course of study outlined for a major in Biology or Chemistry.

Such students will be advised by the Premedical Advisory Committee. Announcements of The Medical Admission Tests and the Dental Aptitude Tests will be made prior to the dates they will be given.

Listed below are the minimum requirements of the State colleges and the American Society of Clinical Pathologists. Students who contemplate study in these fields are advised that the requirements listed are the minimum requirements and that good grades (an average of "B" or better) and a college degree should enhance one's possibilities of acceptance. Those who plan to attend professional schools **should consult the catalog of the specific school they plan to attend before beginning their preparatory work.**

PRE-DENTISTRY

1. A minimum of 60 semester hours which must be approved by the Dean of Admission of respective school.
2. The grade average must be a "C" or better in each course.
3. Courses required:
   A. 12 semester hours of General Biology or General Zoology, including Comparative Anatomy.
   B. 8 semester hours of General Physics which includes laboratory credit.
   C. 8 semester hours in General Chemistry with laboratory.
   D. 6 semester hours in Organic Chemistry with laboratory.
   E. 6 semester hours in English Composition and Rhetoric (Freshman).
   F. 6 semester hours of American Government.
   G. 6 semester hours of History of the United States.
4. It is suggested that candidates should complete 12 hours of English of which 6 semester hours must be in Composition and Rhetoric; also 4 hours in Quantitative (volumetric) Analysis.
5. Courses recommended as electives:
   A. Mathematics
   B. English (in addition to the required number of hours)
   C. Psychology
   D. Sociology
   E. Ethics
   F. Economics
   G. Genetics (Hereditary)
   H. A Foreign Language
   I. Embryology

PRE-MEDICINE

Requirements for entrance (State Medical Schools)

Medical College Admission Test: required

Years of college: 4

Four years of college work and the receipt of the baccalaureate degree are required for admission. However, the Committee on Admissions reserves the right to accept for admission a few students who have demonstrated outstanding academic qualifications and who are unquestionably mature physically, emotionally, and intellectually, but who have not fulfilled this requirement.

COURSE WORK

Required courses are:

	Hrs.
Chemistry (total)	18
Inorganic (Including 4 hours of laboratory	8
Quantitative analysis (primarily volumetric	4
Organic (including laboratory)	5
Biology (including 4 hours laboratory)	12
Either general biology or zoology is acceptable, but the course must include comparative vetebrate anatomy. Human physiology and anatomy and bacteriology may not be counted in fulfilling the biology requirement.	
Physics (including 2 hours of laboratory)	8
Mathematics	6
Must include algebra and trigonometry, or analytical geometry, if this is desired, where trigonometry was taken in high school.	
English	12
To include 6 semester hours of freshman English and 6 semester hours of literature.	

Courses in foreign languages, mathematics, physical chemistry, general history, and philosophy are strongly recommended.

PRE-VETERINARY MEDICINE

A minimum of seventy semester hours are required.
These must include:
8 hours inorganic chemistry;
8 hours of organic chemistry;
8 hours of Biology (at least 4 hours Zoology);
6 hours of Mathematics (algebra and trigonometry);
6 to 8 hours of Physics;
8 hours English (6 in Rhetoric and composition);
3 hours American Government;
6 hours Animal Husbandry;
6 hours American History.

PRE-MEDICAL TECHNOLOGY REQUIREMENTS

Successful completion of at least 90 semester hours, including required courses in:

Chemistry—Minimum of 4 semesters or 16 semester hours. One full-year general college chemistry, which may include qualitative analysis, is required. The remaining courses may be in qualitative, quantitative, organic or physical chemistry, or biochemistry. (One semester of quantitative analytical chemistry is strongly recommended.)

Biological Sciences—Minimum of 4 semesters or 16 semester hours. One full-year lecture and laboratory course in general biology and/or zoology is required. The remaining biology courses may be in bacteriology, comparative anatomy, physiology, parasitology, histology, histologic technique, or genetics. (One semester in basic bacteriology is recommended.)

Mathematics—3 semester hours college mathematics. (Courses in physics are recommended.)

RECOMMENDED ELECTIVES

Electives, as for any professional career, should include broad general education in English, Social Sciences.

TECHNICAL TRAINING

After completing three years of college, a student must spend at least 12 consecutive months in a School of Medical Technology approved by the American Medical Association. He will then be eligible to take the examination conducted by the Board of Registry of Medical Technologists of the American Society of Clinical Pathologists for certification as an MT (ASCP).

There are over 700 Approved Schools of Medical Technology, located in 49 states, the District of Columbia, Puerto Rico and the Canal Zone. Most of the schools are small, and all are connected with hospitals or medical schools. A list of the schools can be obtained from the Registry of Medical Technologists.

PRE-NURSING

Students who plan to study nursing may follow the suggested curriculum below for Pre-Nursing:

First Semester	*Hrs.*	*Second Semester*	*Hrs.*
English 113	3	English 123	3
Mathematics 173	3	History 173	3
Physical Education 111	1	Physical Education 121	1
Gen. Psy. 113	3	Psychology 113	3
Zoology 115	5	Chemistry 104	4
	15		14

BIOLOGY

The courses in Biology fall primarily into three groups: those satisfying the basic requirements of general education, those intended to give sufficient knowledge to support majors in other fields (Agriculture, Chemistry, Education, Home Economics, Nursing, Physical Education), and those designed primarily to furnish a foundation for professional work in Biology and Medicine.

MAJOR REQUIREMENTS

For a degree of Bachelor of Science with a major in biology, a minimum of 34 semester hours is required. Courses are prescribed as follows:

Biology 115, 125—General Zoology	10 hours
Biology 134—General Botany	4 hours
Biology 314, 324—Human Physiology	8 hours
Biology 414—Vertebrate Embryology	4 hours
Biology 424—Comparative Vertebrate Anatomy	4 hours
Elective in Biology (Advanced Level)	4 hours

The following courses may be taken by advanced undergraduates as an elective:

1. Genetics (Biol. 254)
2. Microbiology (Biol. 594)
3. Histology (Biol. 524)
4. Parasitology (Biol. 624)
5. Entomology (Biol. 544)

In addition to the above requirements for major the following courses must be presented: Chemistry 115, 125, Physics 214, 224 and Mathematics 113 and 123. Each must present in thesis form the result of a scientific investigation.

MINOR REQUIREMENTS

For a minor in biology, twenty-two semester hours in addition to Science 333—Teaching of High School Science (for those who plan to teach), which counts as Education are necessary. The courses are prescribed as follows:

Biology 115, 125—General Zoology	10 hours
Biology 134—General Botany	4 hours
Biology 314, 324—Human Physiology	8 hours

In addition to the twenty-two semester hours each minor of Biology must present the following courses:

Chemistry 114, 124—General Chemistry	8 hours
Biology 102—Laboratory Technique	2 hours

All major and minor students must attain and maintain a grade of "C" or above in all science courses; if a student's average drops below "C", he will be asked to change to another major or minor field. Only grades of "C" or above in the sciences can be counted toward either a major or minor in biology.

SUGGESTED OUTLINE FOR A MAJOR IN BIOLOGY FOR PRE-MEDICAL STUDENTS*

FRESHMAN YEAR

First Semester	*Hrs.*	*Second Semester*	*Hrs.*
Biology 114 General Zoology	4	Biology 124 General Zoology	4
English 113 Grammar and Composition	3	English 123 Reading and Composition	3
Mathematics 113 College Algebra	3	Mathematics 123 Trigonometry	3
Social Science 113 Survey of Social Science	3	Biology 134 General Botany	4
Foreign Language 113 Elementary German or French	3	Foreign Language 123 Elementary German or French	3
Physical Education 111 Freshman Practice	1	Physical Education 121 Freshman Practice	1
Military Science 112 (Men) Elementary	2	Military Science 122 (Men)	2
	17 or 18		18 or 19

SOPHOMORE YEAR

Biology 314 Human Anatomy and Physiology	4	Biology 324 Human Anatomy and Physiology	4
Chemistry 114 General Inorganic Chemistry	4	Chemistry 124 General Inorganic Chemistry	4
English 213 Public Speaking	3	English 223 Introduction to Literature	3
Foriegn Language 213 Intermediate German or French	3	Foreign Language 223 Intermediate German or French	3
History 173 The U. S. 1492-1876	3	History 183 The U. S. 1877-Present	3
Physical Education 211 Sophomore Practice	1	Physical Education 221 Sophomore Practice	1
Military Science 212 (Men)	2	Military Science 222 (Men)	2
	17 or 20		17 or 20

JUNIOR YEAR

Biology 414 Vertebrate Embryology	4	Biology 202 Laboratory Technique	2
Chemistry 204 Qualtitative Analysis	4	Biology 424 Comparative Anatomy	4
Political Science 113 American National Government	3	Chemistry 214 Quantitative Analysis	4
Elective in Biology (Advanced level)	4	Political Science 123 State Government	3
Elective	3	English 343 American Literature	3
	18	Biology 451 Research	1
			17

SENIOR YEAR

Physics 214 General Physics	4	Physics 224 General Physics	4
Chemistry 315 Organic Chemistry	5	Chemistry 325 Organic Chemistry	5
Elective	6	Electives	6
Biology 461 Research	1	Biology 461 Research	1
	16		16

*Students choosing this Curriculum in Biology are required to obtain a statement from the parent that the student does not expect to teach.

SUGGESTED FOUR-YEAR PROGRAM FOR A TEACHING MAJOR IN BIOLOGY

FRESHMAN YEAR

First Semester	*Hrs.*	*Second Semester*	*Hrs.*
Biology 114 General Zoology	4	Biology 124 General Zoology	4
English 113 Grammar and Composition	3	English 123 Reading and Composition	3
Social Science 113 Survey of Social Science	3	Biology 134 General Botany	4
Mathematics 113 College Algebra	3	Mathematics 123 Trigonometry	3
Foreign Language 113 Elementary French or German	3	Foreign Language 123 Elementary French or German	3
Physical Education 111 Freshman Practice	1	Physical Education 121 Freshman Practice	1
Military Science 112 (Men) Elementary	2	Military Science 122 (Men) Elementary	2
	17 or 18		18 or 19

SOPHOMORE YEAR

Biology 314 Human Physiology	4	Biology 324 Human Physiology	4
Chemistry 114 Inorganic Chemistry	4	Chemistry 124 Inorganic and Qualitative	4
Education 313 Am. Public Sch. & Curriculum	3	Education 343 Human Development & Learning	3
English 213 Public Speaking	3	English 223 Introduction to Literature	3
Foreign Language 213 French or German Reading and Grammar	3	Foreign Language 223 French or German Reading and Grammar	3
Physical Education 211 Sophomore Practice	1	Physical Education 221 Sophomore Practice	1
Military Science 212 (Men) Elementary	2	Military Science 222 (Men) Elementary	2
	17 or 20		17 or 20

JUNIOR YEAR

Biology 414 Vertebrate Embryology	4	Biology 424 Comparative Anatomy	4
History 173 The United States 1492-1837	3	History 183 The United States 1837 - Present	3
Minor (Elective)	3	Education 483 Basic Concepts in Education	3
Education 333 Methods of Teaching	3	Physics 224 General Physics	4
Physics 214 General Physics	4	Biology 202 Laboratory Technique	2
	17		16

SENIOR YEAR

Elective	3	Elective	3
Political Science 113 National Government	3	Political Science 123 State Government	3
Biology 451 Research	1	Education 406 Student Teaching	6
Elective in Major Field	4	Elective	4
College Science 113 Survey of College Science	3	Biology 461 Research	1
	17		17

DESCRIPTION OF COURSES

BIOLOGY

114. General Zoology. (Biol 114 Gen Zoology) (2-4) Credit 4. Fundamental principles of biology from the study of embryology, structure and physiology of the frog. (For non-majors and minors.) Laboratory fee: $2.00.

113. General Biology. (Biol 113 Gen Biology) (2-2) Credit 3. For students who plan to teach at the pre-school, elementary or at the secondary school level in a non-science-mathematics area; a study of the personal and social aspects of health promotion, disease prevention, hygiene, sanitation, heredity and physiology as they apply to man. Laboratory fee: $2.00.

115. General Zoology. (Biol 115 Gen Zoology) (3-4) Credit 5. For majors and minors in biology; a detailed study of morphology, physiology, ecology, and taxonomy of the vertebrates. Laboratory fee $2.00.

123. General Biology. (Biol 123 Gen Biology) (2-2) Credit 3. A study of plants and animals and how they are related ecologically. Laboratory fee: $2.00.

124. General Zoology. (Biol 124 Gen Zoology) (2-4) Credit 4. Morphology, physiology and relationship in invertebrate groups. Prerequisite: Biology 114. (For non-majors and minors.) Laboratory fee: $2.00.

125. General Zoology. (Biol 125 Gen Zoology) (3-4) Credit 5. For majors and minors in biology; a detailed study of morphology, physiology, ecology, and taxonomy of the invertebrates. Laboratory fee: $2.00.

134. General Botany. (Biol 134 Botany) (2-4) Credit 4. Morphology, physiology of flowering plants; structure, method of reproduction and biotic relationships of types representative of lower plants. Laboratory fee: $2.00.

154-164. Anatomy and Physiology. (Biol 154-164 Anatomy-Phys) (2-2) Credit 4. I and II. Structure and functions of the human body; the structure of each of the systems demonstrated by models, charts and animal dissections; their functions studied by experiments. Laboratory fee: $2.00.

173. General Microbiology and Pathology. (Biol 173 Bact Path) (2-2) Credit 3. I. Morphology and physiology of micro-organisms related to health and sanitation; asepsis disinfection and growth and control of those organisms causing common infectious diseases. Laboratory fee: $2.00.

254. Genetics. (Biol 254 Genetics) (2-4) Credit 4. Laws and principles governing heredity in plants and animals; relation to plant and animal improvement and to Eugenics. Prerequisite: Biology 134, 114. Laboratory fee: $2.00.

304. Physiology for students of Home Economics. (Biol 304 Physiology) (2-4) Credit 4. Structure of function of human organs and systems as related to Home Economics and good health. Laboratory fee $2.00.

314-324. Human Physiology and Anatomy. (Biol 314 324 Phys-Anatomy) (Majors and Physical Education Majors) (2-4) Credit 4. Structure; physiology and human organ system and related principles. Prerequisite: Biology 114, 124. Laboratory fee: $2.00.

334. General Microbiology. (Bacteriology) (Biol 334 Microbiology) (2-4) Credit 4. Morphology, physiology, classification, cultivation of microorganisms, relation to agriculture, premedics and industry. Prerequisites: General Chemistry, Biology 314 and 114. Laboratory fee: $2.00.

354. General Parasitology. (Biol 354 Parasitology) (3-4) Credit 4. Morphology, life history, diagnosis, distribution, host parasite relationship and control of the important parasites affecting man and other animals.

364. Animal Histology. (Biol 364 Histology) (2-3) Credit 4. Microscopic study of tissues and organs of vertebrates; relation of structure to function. Laboratory fee: $2.00.

414. Vertebrate Embryology. (Biol 414 Embryology) (3-5) Credit 4. Structure, principles and progress in vertebrate development; chicken and pig as principal laboratory material. Prerequisite: Biology 115-125. Laboratory fee: $3.00.

424. Comparative Anatomy. (Biol 424 Comp Anatomy) (3-5) Credit 4. Anatomy of organs and organ systems, their function and evolution in major vertebrate types. Prerequisites: Biology 114, 124, 414. Laboratory fee: $3.00.

464. Plant Physiology. (Biol 464 Plants) (2-4) Credit 4. I. Structure, physiology of plants organ systems and related principles. Laboratory fee: $2.00.

451-461. Research. (Biol 451 Research) (0-2) Credit 1. I or II. Library and laboratory work on specific problems studied for investigative paper (required of all majors).

102-202. Laboratory Technique. (Biol 102-202 Lab Tech) (1-5) Credit 2. I or II. A training course in laboratory methods for prospective teachers of biology, pre-medical, medical techs., and etc. Required of students electing Biology as a major or minor field.

CHEMISTRY

MAJOR AND MINOR REQUIREMENTS

For a B.S. Degree in Chemistry, 36 semester hours are required of which 16 semester hours must be courses numbered 300 or above.

Twenty-four semester hours are required for a minor in Chemistry of which five hours must be in courses numbered 300.

All students who major or minor in Chemistry must take the following courses in Chemistry: Chemistry 115, 125, 204, 214 and 315. Pre-medical students are advised to take Chemistry 325. In addition to the above courses, all persons who major in chemistry must take the following courses: Physics 214 and 224; Mathematics 113. 123. 214, 224, and 323.

Students who plan to major or minor in chemistry will be expected to maintain a grade of not less than a "C" in each course which is the minimum requirement and must take courses 115 and 125 which are designed for students who plan to major or minor in chemistry.

SUGGESTED OUTLINE FOR A MAJOR IN CHEMISTRY WITH MINOR IN MATHEMATICS

FRESHMAN YEAR

First Semester	*Hrs.*	*Second Semester*	*Hrs.*
Chemistry 115 General Inorganic Chemistry	5	Chemistry 125 General Inorganic Chemistry	5
English 113 Grammar and Composition	3	English 123 Reading and Composition	3
Mathematics 113 College Algebra	3	Mathematics 123 Trigonometry	3
Social Science 113 Introduction to Social Science	3	Physical Education 121 Freshman Practice	1
Physical Education 111 Freshman Practice	1	Military Science 122 (Men) Elementary	2
Military Science 112 (Men) Elementary	2	Political Science 113 American National Government	3
Chemistry 102 Lab Tech	2	Chemistry 202 Lab Tech	2
	16 or 18		16 or 18

SOPHOMORE YEAR

Chemistry 204 Qualitative Analysis	4	Chemistry 214 Quantitative Analysis	4
Education 313 American Public School Curriculum	3	Education 343 Human Development and Learning	3
Physics 214 General Physics	4	Mathematics 213 Analytical Geometry	3
French 113 or German 113 Elementary French or German	3	French 123 or German 123 Elementary French or German	3
Physical Education 211 Sophomore Practice	1	Physical Education 221 Sophomore Practice	1
Military Science 212 (Men) Elementary	2	Military Science 222 (Men) Elementary	2
Government 123 American State Government	3	Physics 224 General Physics	4
	18 or 19		18 or 19

JUNIOR YEAR

First Semester	*Hrs.*	*Second Semester*	*Hrs.*
Chemistry 315 General Organic Chemistry	5	Chemistry 325 General Organic Chemistry	5
Mathematics 214 Differential Calculus	4	Mathematics 224 Integral Calculus	4
English 213 Public Speaking	3	English 223 Introduction to Literature	3
Education 333 Methods of Teaching	3	Education 483 Basic Concepts in Education	3
French 213 or German 213 Reading and Grammar Review	3	French 213 or German 283 Reading and Grammar Review	3
	18		18

SENIOR YEAR

Chemistry 414 Physical Chemistry	4	Chemistry 424 Physical Chemistry	4
Education 406 Student Teaching	6	Mathematics Elective	3
History 173 American History	3	Electives	4
Chemistry 451 Research	1	History 183 American History	3
Mathematics 323 Intermediate Calculus	3	Chemistry 461 Research	1
	17		15

DESCRIPTION OF COURSES

CHEMISTRY

102-202. Laboratory Techniques. (Chem 102-202 Lab Tech) (1-5) Credit 2. Training course in Laboratory Methods and calculations for Chemistry majors and minors.

104. Introduction to General Chemistry. (Chem 104 Gen Chem) (2-4) Credit 4. Introductory course in General Chemistry, designed for Pre-Nursing Students. Credit for this course is not accepted in place of course 113 or 114. Lab fee: $2.00.

114-124. General Inorganic Chemistry. (Chem 114 124 Inorganic) (3-4) Credit 4. The first semester deals chiefly with fundamental laws and theories, the periodic chart, formulas, equations, solutions, and elementary calculations. The second semester includes chemical equilibrium, detailed consideration of inorganic compounds and the introduction of Organic Chemistry. Lab fee: $2.00.

115-125. General Inorganic Chemistry. (Chem 115 125 Inorganic) (2-5) Credit 5. For students majoring or minoring in chemistry; composition, structure, changes of matter and the laws governing these changes; fundamentals of the most modern concepts. The second semester deals largely with properties and preparation of the elements and their inorganic compounds. Lab fee: $2.00.

204. Qualitative Analysis. (Chem 204 Qual Anal) (2-4) Credit 4. Analytical reactions from the point of view of the laws of chemical equilibrium applied to solution of electrolysis; laboratory work of the separation and detection of both metal and nonmetal; micro-qualitative laboratory techniques; prerequisites: Chemistry 115 and 125. Lab fee: $2.00.

214-224. Quantitative Analysis. (Chem 214 224 Quan Anal) (2-4) Credit 4. I or II. Volumetric and gravimetric analysis, stochiometrical relations practical applications. Laboratory work consists of the analysis of samples of salts, ores, water and limestone. Prequisite: 204. Lab fee: $2.00.

244. Elementary Physiological Chemistry. (Chem 244 Physiologicl) Credit 4. II. For students of Home Economics and Agriculture. Study of the composition and metabolism of the fats, proteins, carbohydrates, and vitamins. Prerequisite: Chemistry 114, 124. Lab fee: $3.00.

3-4. Introductory Organic Chemistry. (Chem 314 Organic) (2-4) Credit 4. I. For students majoring in Agriculture, and Home Economics. An introduction to aliphatic and aromatic compounds, fats carbohydrates, and proteins. Prerequisite: Chemistry 114, 124. Lab fee: $3.00.

315-325. General Organic Chemistry. (Chem 315-325 Organic) (3-4) Credit 5. I or II. For Chemistry major and minors, pre-medical, pre-dental, and student nursing. Aliphatic and aromatic compounds: preparation and testing of representative compounds of the aliphatic and aromatic substances. Prerequisite: Chemistry 115, 125 and 204 and 214. Lab fee: $3.00.

401. Journal Reading and Chemical Literature. (Chem 401 Journals) (1-0) I or II. For Chemistry majors. Reports and discussion on current chemical literature and research. Prerequisite: Major in Chemistry or permission of Instructor.

402. Organic Preparation. (Chem 402 Organic Prep) (1-4) Credit 2. I or II. Preliminary work in the synthesis of organic compounds and a study of the reaction of compounds of the theoretical and industrial importance. Prerequisite: Chemistry 325. Lab fee: $3.00.

414-424. Physical Chemistry. (Chem 414 424 Physical) (3-4) Credit 4. I and II. Three one-hour lectures per week and one four-hour laboratory period (or two laboratory periods consisting of two hours each). Properties of gases, liquids and solids, solutions, thermodynamics and thermochemistry, homogeneous and heterogeneous chemical equilibrium, chemical kinetics, electrochemistry, atomic and molecular structure, elements of the equantum theory, and photochemistry. Prerequisits: Quantitative Analysis, College Physics, and Integral Calculus with an average of "C" or better. Lab fee: $2.00.

434. Biochemistry. (Chem 434 Biochemistry) (2-4) Credit 4. I or II. An introductory course on the chemistry of living matter, foods, metabolism and nutrition. The laboratory works deal with the examination of tests of foods, nutritional studies and the qualitative and quantitative examination of blood and urine. Prerequisite: Chemistry 214, 315 and 325 or permission of instructor. Lab fee: $3.00.

451-461. Research. (Chem 451 461 Research) (0-2) Credit 1. I or II. Library and laboratory work on the specific problems to be studied for investigative paper required of all majors.

454. Instrumental Analysis. (Chem 454 Analysis) (3-2) Credit 4. An introduction to the theory and application of modern instruments to chemical analysis. Includes laboratory work with optical, electrical and x-ray instruments. Prerequisites: Chem 414 or consent of instructor. Lab fee $2.00.

PHYSICS

MAJOR AND MINOR REQUIREMENTS

A major in Physics consists of Physics 214, 224, 413 and additional credits to make a total of 31 hours. A minor consists of Physics 214, 224 and additional credits to make a total of 22 hours.

In addition to the above requirements for a major in Physics, the following courses must be presented: Chemistry 115, 125; and Mathematics 113. 123; and a course in differential and integral calculus.

A person majors in Physics must maintain a grade of "C" or above in all science courses. If a student's average drops below "C" at the end of his sophomore year, he will be asked to change to another major field.

SUGGESTED OUTLINE FOR MAJORS IN PHYSICS

FRESHMAN YEAR

First Semester	*Hrs.*	*Second Semester*	*Hrs.*
Chemistry 115 General Inorganic Chemistry	5	Chemistry 125 General Inorganic Chemistry	5
English 113 Grammar and Composition	3	English 123 Reading and Composition	3
Mathematics 113 College Algebra	3	Mathematics 213 Trigonometry	3
Social Science 113 Introduction to Social Science	3	Mathematics 213 Analytical Geometry	3
Physical Education 111 Freshman Practice (Women)	1	Physical Education 121 Freshman Practice (Women)	1
Military Science 112 Elementary (Men)	2	Military Science 122 Elementary (Men)	2
	15 or 16		15 or 16

SOPHOMORE YEAR

Physics 214 General Physics	4	Physics 224 General Physics	4
Foreign Language 113 Elementary German or French	3	Foreign Language 123 Elementary German or French	3
English 213 Fundamentals of Speech	3	English 223 Introduction to Literature	3
Education 313 American Public School Curriculum	3	Education 343 Human Development and Learning	3
Mathematics 214 Differential Calculus	4	Mathematics 224 Integral Calculus	4
Physical Education 211 Sophomore Practice (Women)	1	Physical Education 221 Sophomore Practce (Women)	1
Military Science 212 Elementary (Men)	2	Military Science 222 Elementary (Men)	2
	18 or 19		18 or 19

JUNIOR YEAR

Physics 313 Mechanics	3	Mathematics 323 Intermediate Calculus	3
Political Science 113 American National Government	3	Political Science 123 State Government	3
Foreign Language 213 Intermediate French or German	3	Foreign Language 223 Intermediate French or German	3
History 173 U. S. 1492 to 1876	3	History 183 U. S. 1877 to Present	3
Physics 333 Electricity and Magnetism	3	Physics 343 Electricity and Magnetism	3
	15		15

SENIOR YEAR

Physics 474 Optics	4	Physics 424 Modern Physics	4
Physics 413 Heat, Thermodynamics and Statistical Mechanics	3	Physics 402 Advanced Laboratory Technique	2
English 363 Advanced Grammar	3	Education 483 Basic Concepts in Education	3
Education 333 Methods of Teaching Science	3	Education 406 Student Teaching	6
Mathematics 423 Differential Equations	3		15
Physics 411 Seminar	1		
	17		

DESCRIPTION OF COURSES

PHYSICS

214-224. General Physics. (Phys 214 224 Gen Physics) (2-4) Credit 4. Introductory mechanics, heat sound, light, electricity and magnetism. Prerequisite: Mathematics 113 and 123.

215-225. General Physics. (Phys 215 225 Gen Physics) (3-4) Credit 4. Introductory mechanics, heat, sound, light, electricity and magnetism. Prerequisite: Mathematics 113, 123, 213 and Mathematics 214 and 224 must be taken concurrently.

313. Mechanics. (Phys 313 Mechanics) (3-0) Credit 3. Newton's Laws, motion of a particle, of a system of particles, of a rigid body; generalized coordinates; elasticity; elastic waves; fluid dynamics. Prerequisite: Same as for Physics 314.

314. Modern Physics. (Phys 314 Modern Phys) (3-2) Credit 4. Introductory atomic nuclear and solid state physics. Prerequisite: Physics 215 and 225.

333-343. Electricity and Magnetism. (Phys 333 343 Magnetism) (2-2) Credit 3. Electrostatics, magnetostatics; electromagnetic induction; electric and magnetic properties of matter; direct and alternating current circuits; the electromagnetic field; electromagnetic waves. Prerequisite: Same as for Physics 314.

402. Advanced Laboratory Technique. (Phys 402 Lab Tech) (0-4) Credit 2. An advanced experimental problem is assigned to the student. The result of the investigation is recorded as a thesis. This course is open only to Physics majors.

411-421. Seminar. (Phys 411 421 Seminar) (1-0) Credit 1. Group study of special topics in Physics. Open to students majoring or minoring in Physics.

413. Heat, Thermodynamics and Statistical Mechanics. (Phys 413 Thermodyn) (3-0) Credit 3. Heat transfer; radiation; thermodynamics relations; kinetic theory of gases; classical statistical mechanics; quantum statistics. Prerequisite: Same as for Physics 314.

424. Modern Physics. (Phys 424 Modern Phys) (3-2) Credit 4. Photoelectric effect; thermionic emission; quantum theory of radiation; atomic structure; spectroscopy; x-rays; radioactivity; nuclear structure; cosmic rays; solid state physics. Prerequisite: Same as for Physics 314.

474. Optics. (Phys 474 Optics) (3-2) Credit 4. Geometrical optics and optical instruments; interference and diffraction of light; spectra, dispersion, absorption, scattering, polarization, and double refraction of light. Prerequisite: Same as for Physics 314.

COLLEGE SCIENCE AND SCIENCE EDUCATION

113-123. College Science. (Sci 113 123 Survey) (3-0) Credit 3, I and II. A course designed to give students an orientation in science; to cultivate scientific attitudes and methods of procedure; seeks to broaden concepts, generalizations and outlook; to open new avenues of interest and satisfaction; to enable the individual to meet the problems of existence with available knowledge and requisite skills and to develop scientific appreciation. In addition to the text, the course provides special lectures by the instructor and by other specialists in the various fields of science.

333. The Teaching of High School Science. (Sci 333 HS Methods) (3-0) Credit 3. Methods and materials in teaching of science in the junior and senior high school; training courses for prospective teachers of science: lectures or conferences and field and laboratory work. Required of students who expect to get a teacher's certificate in science.

473. Elementary School Science. (Sci 473 Elem Sch Sci) (3-0) Credit 3. Prerequisites: Ed. 273-283, Ed. 363, and Ed. 393, I and II Basic science concepts, the scientific attitude, and science method; methods of teaching, selecting and organizing subject matter and a variety of science experiences appropriate for elementary school age children through the use of simple materials, community resources, and visual material on science.

Department of Physical Education

The Department of Physical Education offers a four-year plan of study leading to the Bachelor of Science degree with a major in Physical Education. A minor is also offered.

Each major must maintain a "C" average or above to continue in the program. If a student's average is below "C" at the end of his Sophomore year, he will be asked to change to another major field. In addition to maintaining the required scholastic average each major or minor must be able to pass departmental motor ability and physical fitness tests.

HEALTH AND PHYSICAL EDUCATION

For a MAJOR in Physical Education 29 semester hours are required. Courses are prescribed as follows:

P.E. 111, 121, 211, 221 Physical Education Practice ..... 4 hrs.
P.E. 102 and 202, 312 and 322 Elementary and Intermediate Modern Dance or Gymnastics ..... 4 hrs.
P.E. 132 or 142 Individual Sports (Badminton, Archery, Golf, Tennis) ..... 2 hrs.
P.E. 172 History and Principles of Physical Education ..... 2 hrs.
Hl.Ed. 203 Personal Hygiene ..... 3 hrs.
Hl.Ed. 333 Methods and Materials in Health Education (Required for all level certificate) ..... 3 hrs.
P.E. 343 Physical Education Methods and Materials for Secondary Schools ..... 3 hrs.
P.E. 333 Methods and Materials for Teaching Health and Physical Education in Elementary Schools. (Required for Secondary and Elementary level certificate)
P.E. 363 or 383 Coaching and Officiating Team Sports ..... 3 hrs.
P.E. 462 Corrective Physical Education ..... 2 hrs.
P.E. 483 Organization and Administration of Physical Education ..... 3 hrs.

In addition to the above requirements, each major in Physical Education is required to present the following courses:

Biology 115-125 Zoology ..... 10 hrs.
Biology 314-324 Anatomy and Physiology ..... 8 hrs.

MINOR REQUIREMENTS

For a Minor in Physical Education 19 semester hours are required. Courses prescribed as follows:

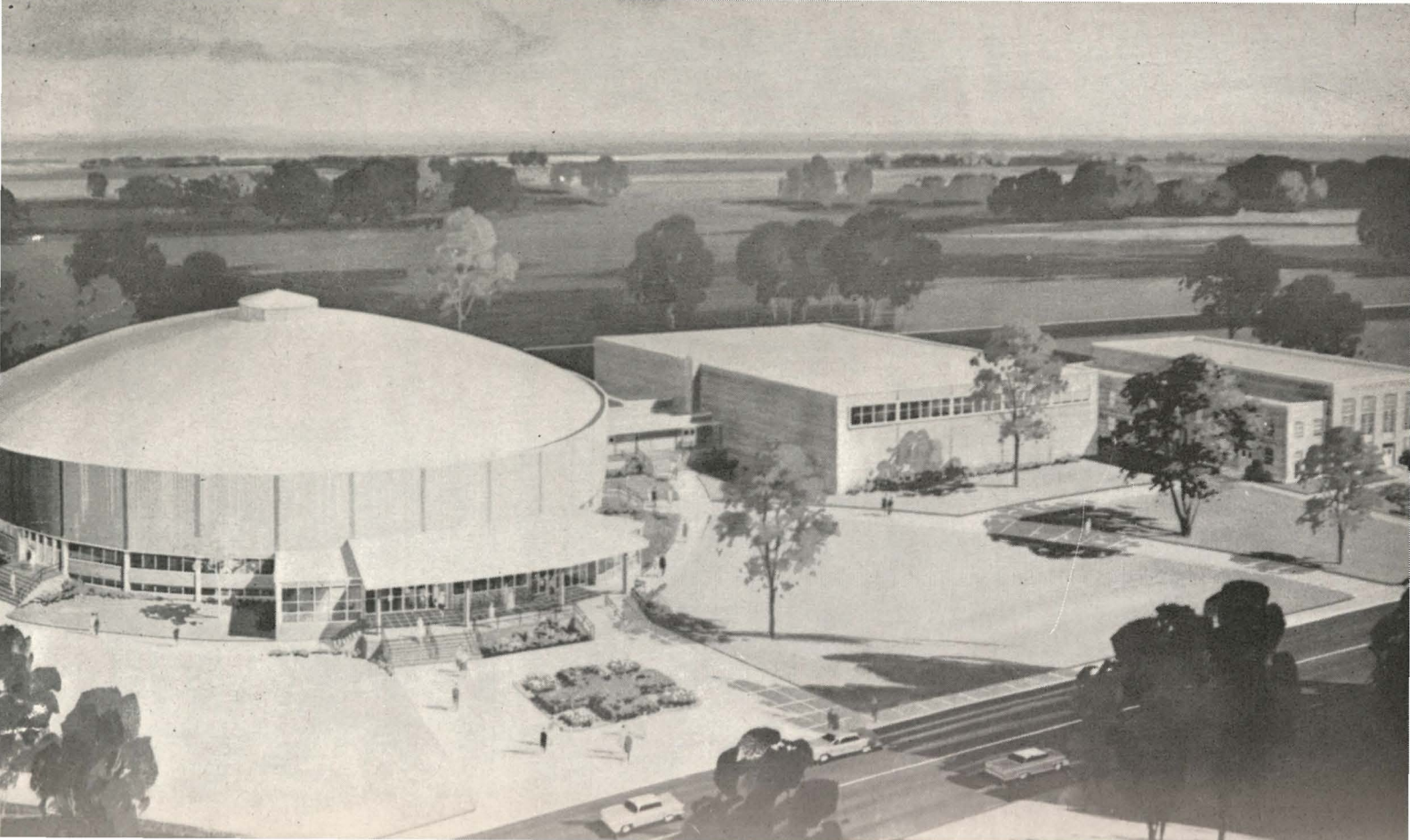
P.E. 111, 121, 211, 221 Physical Education Practice ..... 4 hrs.
P.E. 102 and 2^2 Elementary Modern Dance or
P.E. 312 and 322 Gymnastics ..... 4 hrs.
P.E. 172 History and Principles of Physical Education ..... 2 hrs.
Hl.Ed. 203 Personal Hygiene ..... 3 hrs.
P.E. 343 Physical Education Methods and Materials for Secondary Schools ..... 3 hrs.
P.E. 483 Organization and Administration of Physical Education ..... 3 hrs.

In addition to the above requirements, each minor in Physical Education is required to present the following courses:

Biology 115-125 Zoology ..... 10 hrs.

HEALTH EDUCATION

A HEALTH EDUCATION minor is not open to students majoring in Physical Education.



For a minor in Health Education 18 semester hours are required. These eighteen semester hours may be elected from the following courses:

H.E. 123 Elementary Nutrition	3 hrs.
Hl.Ed. 203 Personal Hygiene	3 hrs.
Hl.Ed. 333 Methods and Materials in Health Education	3 hrs.
P.E. 303 Driver Education and Safety	3 hrs.
Hl.Ed. 353 Public School and Community Hygiene	3 hrs.
Hl.Ed. 392 Principles of Health	2 hrs.
P.E. 402 First Aid	2 hrs.
P.E. 403 Playground and Community Recreation	3 hrs.
P.E. 423 Safety Education	3 hrs.

ADDITIONAL REQUIREMENTS

In addition to basic requirements, each student in the junior year must pass a proficiency test in two of the following activities: golf, tennis, gymnastics, track, badminton or archery.

UNIFORMS

One uniform is required of non-major students, and two uniforms for major students; a gold one-piece suit for non-majors; and a white and gold two-piece suit for women majors. White regulation basketball shoes are also required. The approximate cost of each of these costumes is $7.00. Women should come either equipped with or prepared to purchase these uniforms for their work in Physical Education.

For men majoring in Physical Education regulation uniform and shoes prescribed by the department are required.

Swimming suits will cost approximately $5.00 and are required of all students majoring in Physical Education.

INTRAMURAL ATHLETICS

This program, combining work in physical education, is designed primarily to give students an opportunity to learn and to practice in a variety of sports. A major must at all times be a candidate for one of the varsity or intramural teams.

SUGGESTED FOUR-YEAR PROGRAM WITH A MAJOR IN PHYSICAL EDUCATION

FRESHMAN YEAR

First Semester	*Hrs*	*Second Semester*	*Hrs*
English 113 Grammar and Composition	3	English 123 Reading and Composition	3
Mathematics 173 or 113 Applied Mathematics or College Algebra	3	Mathematics 183 or 123 Applied Mathematics or Trigonometry	3
Biology 115 General Zoology	5	Biology 125 General Zoology	5
History 173 The United States	3	History 183 The United States	3
Physical Education 172 History and Principles of Physical Education	2	Physical Education 102 Elementary Modern Dance or Physical Education 312 Gymnastics	2
Physical Education 111 Practice		Physical Education 121 Practice	
Military Science 112 Elementary Military Science	1	Military Science 122	2
	18		18

HEALTH AND PHYSICAL EDUCATION BUILDING . . . Includes indoor swimming facilities.

SOPHOMORE YEAR

First Semester	*Hrs.*	*Second Semester*	*Hrs.*
English 213 Public Speaking	3	English 223 Introduction to Literature	3
Foreign Language 113 Elementary French or Spanish	3	Foreign Language 123 Elementary French or Spanish	3
Political Science 113 National Government	3	Political Science 123 State Government	3
Physical Education 132 or 142 Individual Sports	2	Health Education 203 Personal Hygiene	3
Physical Education 202 Intermediate Modern Dance or	2	Physical Education 221 Physical Education Practice	
Physical Education 322 Gymnastics		Military Science 222 Elementary Military Science	2
Physical Education 211 Physical Education Practice			14
Military Science 212 Elementary Military Science	2		
	15		

JUNIOR YEAR

Biology 314 Anatomy and Physiology	4	Biology 324 Anatomy and Physiology	4
Foreign Language 213 French or Spanish	3	Foreign Language 223 Intermediate French or Spanish	3
Physical Education 333 Methods and Materials in Health Education	3	Physical Education 343 Physical Education Methods for Secondary Schools	3
Soc. 123 or Social Science 113 Minorities or Introduction	3	Physical Education 462 Corrective Physical Education	2
Physical Education 383 Coaching and Officiating for Men or		Education 313 American Public School	3
Physical Education 363 Coaching and Officiating Team Sports for Women	3		15
Education 343 Human Development	3		
	19		

SENIOR YEAR

Education 303-403 Student Teaching	6	Physical Education 483 Organization and Administration of Health and Physical Education	3
Minor Field and Electives	9	Minor Field and Electives	12
	15	Education 483 Basic Concepts in Education	3
			18

DESCRIPTION OF COURSES

THEORY COURSES IN HEALTH AND PHYSICAL EDUCATION

Zoology 115-125. See Department of Biology for description. Required of all majors and minors.

Human Physiology and Anatomy 314-324. See Department of Biology for description. Required of all majors.

172. History and Principles of Physical Education. (PE 172 History) (1-0) Credit 2. I. Historic development from ancient times to present. Required of all majors and minors.

252. Intramural Sports. (PE 252 Intramural) (1-1) Credit 2. I. Methods of organizing and conducting tournaments, meets, and field days; organization and administration of the intramural program in high school.

303. Driver Education and Safety. (Auto 303 Driver Ed) (1-6) Credit 3. I, II. Preparation for teaching driver education in workshops or secondary schools; state laws and regulations, safety practice, teaching methods; pratice in training drivers using a dual control car.

333. Methods and Materials for Teaching Health and Physical Education in Elementary School. (PE 333 Elem Methods) (3-0) Credit 3. Organization and classification of activities. Each student will be expected to teach activity classes and to evaluate methods of teaching. For elementary teachers.

343. Methods and Materials in Physical Education. (PE 343 HS Methods) (4-0) Credit 3. II. Organization and classification of activities, play areas, equipment and supplies; each student will be expected to teach activity classes in physical education, and to evaluate methods of teaching physical education activities. Required of all majors and minors.

363. Coaching and Officiating. (PE 363 Coaching) (3-0) Credit 3. I Theory and Strategy. For women only.

383. Coaching and Officiating (PE 383 Coaching) (3-0) Credit 3. II Theory and Strategy. For men only.

402. First Aid. (PE 402 First Aid) (1-0) Credit 2. I and II. Techniques of first aid to the injured in home, school and community; safety measures and accident prevention. Course meets requirements for American Red Cross certificate.

403. Playground and Community Recreation. (PE 403 Recreation) (3-0) Credit 3. I and II. A brief historical review of the growth of the play movement; organization and community activities.

423. Safety Education. (PE 423 Safety) (2-2) Credit 3. II. The general program of safety education in public schools is presented with special reference to the selection and organization of materials including the methods and techniques of instruction.

442. Care and Prevention of Athletic Injuries. (PE 442 Injuries) (1-2) Credit 2. II. Theory and practice of prevention and treatment of athletic injuries; practice in techniques of massage and bandaging.

462. Corrective Physical Education. (PE 462 Corrective) (1-2) Credit 2. II. Selection and adaptation of activities for corrective procedures, methods of examining and determining individual needs, activities, programs of both a formal and informal nature. Prerequisites: anatomy and physiology.

483. Organization and Administration of Physical Education. (PE 483 Organization) Credit 3. II. Policies in the organization, management, and supervision of the physical education program. Required of all majors and minors.

132. Crafts. (Art 132 Crafts) (0-2). See department Home Economics.

PRACTICE COURSES

Only one Freshman or Sophomore Practice course may be elected in a semester, except in case of a repeat due to failure. Each student must elect 111 and 121 Freshman Practice in the Freshman year; 211 and 221 Sophomore Practice in the Sophomore year.

102. Elementary Modern Dance. (PE 102 Modern Dance) (1-2) Credit 2. I and II. Fundamental steps designed for beginners.

111W. Freshman Practice. (PE 111W Practice) (0-2) Credit 1. I. Theory and practice of hockey, volleyball and swimming. Basic first aid (offered alternately 9 weeks). For women only.

111M. Freshman Practice. (PE 111M Practice) (0-2) Credit 1. I. Theory and techniques of touch football, speedball, basketball and first aid. For men only.

121W. Freshman Practice continued. (PE 121W Practice) (0-2) Credit 1. II. Theory and practice of basketball, track and field, softball. Continuation of basic first aid. For women only.

121M. Freshman Practice. (PE 121M Practice) (0-2) Credit 1. II. Theory and techniques of volleyball, track and field. Swimming and basic first aid. For men only.

132. Individual Sports. (PE 132 Sports) (2-0) Credit 2. I. Theory and techniques in laying out courts and participating in golf, badminton, aerial tennis darts and horse shoes.

142. Individual Sports. (PE 142 Sports) (2-0) Credit 2. II. A con-

tinuation of PE 132 including tennis, archery, table tennis, croquet, bocce, corkball and shuffleboard.

202. Intermediate Modern Dance. (PE 202 Modern Dance) (1-2) Credit 2. I and II. Free and natural movements; self expression through original and creative dance patterns.

211W. Sophomore Practice. (PE 211W Practice) (0-2) Credit 1. I. Theory and practice of speedball, square and folk dancing, recreational activities (shuffleboard, aerial darts).

211M. Sophomore Practice. (PE 211M Practice) (0-2) Credit 1. II. Theory and techniques of folk and square dancing, archery, badminton and tennis. For men only.

221W. Sophomore Practice. (PE 221W Practice) (0-2) Credit 1. II. Theory and practive of tennis, recreational activities continued, (badminton, archery) **Swimming majors only.** For women only.

221M. Sophomore Practice. (PE 221M Practice) (0-2) Credit 1. II. Theory and techniques of softball, shuffleboard, aerial tennis darts and bowling. **Swimming majors only.** For men only.

131, 231, 331 and 431 (PE 131, 231, 331, 431 Restricted) (0-2) Credit 1. I, II. Theory and practice in recreational activities and quiet games. Activities included will be shuffleboard, bowling, croquet, archery, dominoes, checkers, horseshoes, and bocce.

262. Folk Dancing. (PE 262 Folk Dancing) (1-2) Credit 2. I, II. History appreciation and interpretation of the folk songs, folk stories and folk customs; mastery of steps in folk dancing.

312. Gymnastics. (PE 312 Gymnastics) (1-2) Credit 2. I. Theory and practice in gymnastics (tumbling, stunts, and self-testing).

322. Gymnastics. (PE 322 Gymnastics) (1-2) Credit 2. II. Continuation of Physical Education 312.

371. Methods of teaching swimming and diving and pool operation. (PE 371 Swim Methods) (0-2) Credit 1. I. This course provides those persons who are interested in competitive skills involved in the area of swimming and diving and the operation of the swimming pool.

381. Swimming (PE 381 Swimming) (0-2) Credit 1, II. Continuation of PE 371.

HEALTH EDUCATION COURSES

Fds. 123 Elementary Nutrition. (See Department of Home Economics for description.) Required of all minors in Health Education.

203. Personal Hygiene. (Hl Ed 203 Hygiene) (3-0) Credit 3. I and II. Personal health, problems; biological basis of life; attitudes toward health, fatigue, ventilation and habit forming drugs. Required of all majors and minors.

333. Methods and Materials in Health Education. (Hl Ed 333 Hlth Methods) (3-0) Credit 3. The sources of materials and techniques in the field. Required of all majors and minors.

353. Public School and Community Hygiene. (Hl Ed 353 Cmty Hygiene) (3-0) Credit 3. I and II. Health problems related to the school and community.

392. Principles of Health Education. (Hl Ed 392 Principles) (2-0) Credit 2. I. Programs now in operation; evaluation in terms of various hygiene and scientific criteria.

Department of Political Science

Students who meet the entrance standards of the College are eligible to major in political science. Thirty semester hours of course work in

political science are required for a teaching major in the field, and thirty-six hours are required for the nonteaching major in political science. Eighteen semester hours are required for the minor in political science. Students majoring in political science must take at least one course, in addition to Political Science 103. Political Science 113 or Political Science 123, in each of the following areas of the discipline: politics, public administration, public law, political theory and international relations. Majors and Minors are required to earn two grade points for each semester hour of credit in political science. The Department of Political Science reserves the right to require that any freshman course in the major field be repeated if the grade earned is less than "C".

INTEGRATED MINOR IN THE SOCIAL SCIENCES

Students may elect an integrated minor in the Social Sciences. Students who elect this program must complete the twenty-four semester hours of course work listed below with a "C" average or above. This program is exclusive of the six hours of American History and American Government which the college requires all of its students to complete.

The courses comprising the Social Science Minor are:

History 143 or 153	3
Economics 213 and 223	6
Political Science 213 and 383	6
Geography 163 or 173	3
Sociology 343	3
Social Science 383	3

Any advisement in connection with this program may be secured from the Head of any of the participating Departments.

SUGGESTED FOUR-YEAR PROGRAM FOR POLITICAL SCIENCE MAJORS TEACHING MAJOR

FRESHMAN YEAR

First Semester	*Hrs.*	*Second Semester*	*Hrs.*
English 113 Grammar and Composition	3	English 123 Reading and Composition	3
Natural Science 113 College Science	3	Natural Science 123 College Science	3
Mathematics 173 Elements of Applied Mathematics	3	Mathematics 183 Elements of Applied Mathematics	3
Political Science 113 American National Government	3	Political Science 123 American State and Local Government	3
History 143 Survey of Western Civilization to 1500	3	History 153 Survey of Western Civilization	3
Military Science 112 (Men) Elementary	2	Military Science 122 (Men) Elementary	2
Physical Education 111 Freshman Practice	1	Physical Education 121 Freshman Practice	1
Electives	2	Electives	2
	20		20

SOPHOMORE YEAR

English 213 Public Speaking	3	English 223 Introduction to Literature	3
Foreign Language 113 Elementary French, Spanish or German	3	Foreign Language 123 Elementary French, Spanish or German	3
Political Science 223 Bibliography and Methods	3	Political Science 273 Introduction to Public Administration	3
Political Science 213 Political Parties	3	Political Science 383 International Relations	3
Geography 163 Introduction to Geography	3	History 213 The U. S. 1492 - 1837	3
Military Science 212 (Men) Elementary	2	Military Science 222 (Men) Elementary	2
Physical Education 211 Sophomore Practice	1	Physical Education 221 Sophomore Practice	1
Sociology 262 Principles of Sociology	2	Economics 221 History of Economics	2
	20		20

JUNIOR YEAR

First Semester	*Hrs.*
Foreign Language 213 Intermediate French, German or Spanish	3
Political Science 303 Ancient Political Theory	3
History 223 The U. S., 1837-1898	3
Economics 213 Principles of Economics	3
Education 313 American Public Schools	3
Military Science 312 (Men) Advanced	2
Sociology 372 Social Stratification	2
	19

Second Semester	*Hrs.*
Foreign Language 223 Intermediate French, German or Spanish	3
Political Science 413 American Constitutional Law	3
Economics 223 Economics Problems	3
Education 343 Human Development and Learning	3
Political Science 323 Comparative Government	3
Military Science 324 (Men) Advanced	4
Economics 362 Economics of Competition	2
	21

SENIOR YEAR

Education 483 Basic Concepts in Education	3
Political Science 313 Modern Political Theory	3
Political Science 423 The Constitution and Private Rights	3
Sociology 343 Modern Social Problems	3
Social Science 383 Methods of Teaching Social Studies in High School	3
Military Science 414 (Men) Advanced	4
Electives	2
	21

Education 406 Student Teaching	6
Military Science 422 (Men) Advanced	2
Electives	9
	17

SUGGESTED FOUR-YEAR PROGRAM FOR POLITICAL SCIENCE MAJORS

NON-TEACHING MAJOR

FRESHMAN YEAR

English 113 Grammar and Composition	3
Natural Science 113 College Science	3
Mathematics 173 Elements of Applied Mathematics	3
Political Science 113 American National Government	3
History 143 Survey of Western Civilization to 1500	3
Military Science 112 (Men) Elementary	2
Physical Education 111 Freshman Practice	1
Electives	2
	20

English 123 Reading and Composition	3
Natural Science 123 College Science	3
Mathematics 183 Elements of Applied Mathematics	3
Political Science 123 American State and Local Government	3
History 153 Survey of Western Civilization	3
Military Science 122 (Men) Elementary	2
Physical Education 121 Freshman Practice	1
Electives	2
	20

SOPHOMORE YEAR

First Semester	*Hrs.*	*Second Semester*	*Hrs.*
English 213 Public Speaking	3	English 223 Introduction to Literature	3
Foreign Language 113 Elementary French, Spanish or German	3	Foreign Language 123 Elementary French, Spanish or German	3
Political Science 223 Bibliography and Methods	3	Political Science 273 Introduction to Public Administration	3
Political Science 213 Political Parties	3	Political Science 383 International Relations	3
Geography 163 Introduction to Geography	3	History 213 The U S., 1492 - 1837	3
Military Science 212 (Men) Elementary	2	Military Science 222 (Men) Elementary	2
Physical Education 211 Sophomore Practice	1	Physical Education 221 Sophomore Practice	1
Sociology 262 Principles of Sociology	2	Economics 221 History and Economics	2
	20		20

JUNIOR YEAR

Foreign Language 213 Intermediate German, French or Spanish	3	Foreign Language 223 Intermediate German French or Spanish	3
Political Science 303 Ancient Political Theory	3	Political Science 323 Comparative Government	3
History 223 The U S., 1837 - 1898	3	Business Administration 263 Elementary Accounting II	3
Economics 213 Principles of Economics	3	Economics 223 Economics Problems	3
Business Administration 253 Elementary Accounting I	3	Political Science 313 Modern Political Theory	3
Military Science 312 (Men) Advanced	2	Military Science 324 (Men) Advanced	4
Sociology 372 Social Stratification	2	Economics 362 Economics of Competition	2
	19		21

SENIOR YEAR

Political Science 413 American Constitutional Law	3	Political Science 423 The Constitution and Private Rights	3
Political Science 313 Modern Political Theory	3	Political Science 433 The Presidency	3
Sociology 343 Modern Social Problems	3	Economics 413 Labor Legislation	3
Sociology 373 Introduction to Social Work	3	Economics 403 Money and Banking	3
History 453 Contemporary United States, 1898 to Present	3	Political Science 473 Introduction to Jurisprudence	3
Military Science 414 (Men) Advanced	4	Military Science 422 (Men) Advanced	2
	21		19

DESCRIPTION OF COURSES

103. State and National Government. (PoSc 103 Federal Govt) (3-0) Credit 3. Government of Texas and the United States (May be taken by advanced ROTC students and others working toward certificates in various technical schools in the College).

113. American National Government. (PoSc 113 Natl Govt) (3-0) Credit 3. Constitutional foundations and development, structure, private rights, political processes and functions of the national government (required of all students for graduation and a prerequisite for all political science courses except Political Science 123 and Political Science 103).

123. American State and Local Government. (PoSc 123 State Govt) (3-0) Credit 3. American state and local government; constitutional developments, political parties and elections, structure, functions and intergovern-

mental relations; special concern for Texas government. (Required of all students for graduation and a prerequisite for all political science courses except Political Science 103 and Political Science 113).

213. Political Parties. (PoSc 213 Parties) (3-0) Credit 3. Nature, functions, evolution and organization of the American party system.

223. Bibliography and Methods in Political Science. (PoSs 223 Bibliography) (3-0) Credit 3. The discipline, its authorities and its methodology; use of public documents and other source materials. (Required of all majors in political science).

273. Introduction to Public Administration. (PoSc 273 Public Admin) (3-0) Credit 3. Organization, responsibility, personnel management, fiscal processes, functions, and problems of public administration.

303. Ancient and Medieval Political Theory. (PoSc 303 Ancient Thry) (3-0) Credit 3. Political theories of the Greek, Roman and medieval European thinkers; special attention to Plato, Aristotle, Cicero, St. Augustine, John of Salisbury, St. Thomas Aquinas and Dante.

313. Modern Political Theory. (PoSc 313 Modern Thry) (3-0) Credit 3. Political theories from the Reformation to the present; special attention to Machiavelli, Bodin, Hobbes, Montesquieu, Locke, Rousseau, Jefferson, the Mills, Hegel, Marx and socialist theories.

323. Comparative Government. (PoSc 323 Comparative) (3-0) Credit 3. Comparison of the organization, functions, and processes of governments of the world; special attention to Great Britain, France, Germany and the Soviet Union.

383. International Law and Relations. (PoSc 383 Intranatl Law) (3-0) Credit 3. Nature, function and enforcement of international law; and historical and analytical study of the politics of international affairs.

413. American Constitutional Law. (PoSc 413 Const Law) (3-0) Credit 3. Basic principles of the American constitutional system; judicial interpretation and application of these principles in construing the powers of government and the rights of persons.

423. The Constitution and Private Rights. (PoSc 423 Rights (3-0) Credit 3. Rights and duties of United States citizenship; crucial issues of individual freedom, subversion, loyalty and governmental authority as adjudicated by federal courts.

433. The Presidency. (PoSc 433 Presidency) (3-0) Credit 3. Evolution of the office of the president of the United States; his powers in the areas of politics, administration, legislation, war and foreign affairs.

453. Public Personnel Administration. (PoSc 453 Persnl Admin) (3-0) Credit 3. Development and problems of the public service; recruitment, examination, placement, remuneration, morale, retirement, loyalty, and responsibility.

463. The Legislative Process. (PoSc 463 Legl Process) (3-0) Credit 3. Nature and elements of the legislative process; organization and procedure of legislative bodies.

Department of Sociology

This department provides a focus for either a liberal arts education or a pre-professional career in those areas concerned with human behavior. Thus students select a major in this department for one of two reasons: (1) to receive a broad general education with concentration in Sociology or (2) to build a strong foundation in preparation for vocational objectives.

The principal vocational goals toward which a major in Sociology or Social Service may lead are (1) teaching sociology and the social sciences at either the secondary or college level; (2) social welfare work as case workers, group workers, community organizers or public welfare administrators; (3) public relations work in either public or private agencies and institutions; and (4) social research positions with governmental agencies and private research foundations.

Students planning to teach in the secondary schools must complete the requirements for a teacher certificate as established by the Texas Education Agency. The major certifying as a Social Studies Teacher is expected to follow the program designated as such.

The major not qualifying as a Social Studies Teacher is expected to follow the Social Service Program.

Students majoring in Social Service as pre-professional preparation for social work should plan on entering a graduate school of social work and obtaining the master's degree, although it is possible in many states, including Texas, to obtain positions in social work agencies without an advanced degree.

Thirty-two semester hours in Sociology or Social Service are required for a major in the field, and twenty semester hours must be completed for a minor. A grade of "C" or above must be earned in all courses presented towards major or minor requirements. Sociology 463 must be completed before the student begins writing the senior investigative paper.

In addition to the thirty-two semester hours in Sociology and Social Service, the student qualifying for a teaching certificate will complete twelve semester hours distributed as follows:

Economics 213, 223	6 hours
History 143	3 hours
Geography (Elective)	3 hours

In addition to the thirty-two semester hours in Sociology and Social Service, the student not qualifying for a teaching certificate will complete twelve semester hours distributed as follows:

Economics 213, 223	6 hours
Psychology 113, 123	6 hours

Required courses for all majors in the department are:

Soc. 263 General Sociology
Soc. 303 The Family
Soc. 333 Social Psychology
Soc. 343 Modern Social Problems
Soc. 373 Introduction to the Field of Social Work
Soc. 402 Sociology Seminar
Soc. 463 Social Research

Additional required courses for students majoring in Social Service are:

Soc. 403 Introduction to Social Case Work
Soc. 433 Introduction to Social Group Work
Soc. 453 Supervised Field Work

Required courses for all minors in the department are:

Soc. 263 General Sociology
Soc. 303 The Family
Soc. 333 Social Psychology
Soc. 342 Modern Social Problems
Soc. 402 Sociology Seminar

PROGRAM FOR SOCIOLOGY MAJORS CERTIFYING AS SOCIAL STUDIES TEACHERS

FRESHMAN YEAR

First Semester	*Hrs.*
English 113 Freshman Composition	3
College Science 123 Survey	3
Mathematics (Elective)	3
Political Science 113 American National Government	3
European History 143 Europe 1500 - 1815	3
Physical Education 111 Freshman Practice	1
Military Science 112 (Men) Elementary	2
	16 or 18

Second Semester	*Hrs.*
English 123 Freshman Composition	3
College Science 113 Survey	3
Mathematics (Elective)	3
Political Science 123 State and Local Government	3
Sociology 123 Minorities in American Society	3
Physical Education 121 Freshman Practice	1
Military Science 122 (Men) Elementary	2
	16 or 18

SOPHOMORE YEAR

English 213 Fundamentals of Speech	3
Sociology 263 General Sociology	3
Foreign Language 113 Reading and Grammar	3
History 213 The U. S. 1492 - 1837	3
Economics 213 Principles of Economics	3
Physical Education 211 Sophomore Practice	1
Military Science 212 (Men) Elementary	2
	16 or 18

English 223 Introduction to Literature	3
Sociology 303 The Family	3
Foreign Language 123 Reading and Grammar	3
History 223 The U. S., 1837 - 1898	3
Economics 223 Economic Problems	3
Physical Education 221 Sophomore Practice	1
Military Science 222 (Men) Elementary	2
	16 or 18

JUNIOR YEAR

Sociology 373 Introduction to Social Work	3
Sociology 333 Social Psychology	3
Education 313 American Public School	3
Geography (Elective)	3
Foreign Language 213 Advanced Grammar and Reading	3
	15

Sociology 343 Modern Social Problems	3
Sociology 463 Social Research	3
Education 343 Human Development and Learning	3
Education 483 Basic Concepts in Education	3
Foreign Language 223 Advanced Grammar and Reading	3
	15

SENIOR YEAR

Sociology 402 Sociology Seminar	2
Sociology (Electives)	6
Education 333 Methods	3
Electives	6
	17

Sociology (Electives)	6
Elective	3
Education 406 Student Teaching	6
	15

PROGRAM FOR SOCIAL SERVICE MAJORS

NON-TEACHING PROGRAM

FRESHMAN YEAR

First Semester	*Hrs*	*Second Semester*	*Hrs.*
English 113 Freshman Composition	3	English 123 Freshman Composition	3
College Science 123 Survey	3	College Science 113 Survey	3
Mathematics (Elective)	3	Mathematics (Elective)	3
Political Science 113 American National Government	3	Political Science 123 State and Local Government	3
Psychology 113 General Psychology	3	Sociology 123 Minorities in American Society	3
Physical Education 111 Freshman Practice	1	Physical Education 121 Freshman Practice	1
Military Science 112 (Men) Elementary	2	Military Science 122 (Men) Elementary	2
	16 or 18		16 or 18

SOPHOMORE YEAR

English 213 Fundamentals of Speech	3	English 223 Introduction to Literature	3
Sociology 263 General Sociology	3	Sociology 303 The Family	3
Foreign Language 113 Reading and Grammar	3	Foreign Language 123 Reading and Grammar	3
History 173 The U. S. 1491 - 1876	3	History 183 The U. S. 1877 to the Present	3
Economics 213 Principles of Economics	3	Economics 223 Economics Problems	3
Physical Education 211 Sophomore Practice	1	Physical Education 221 Sophomore Practice	1
Military Science 212 (Men) Elementary	2	Military Science 222 (Men) Elementary	2
	16 or 18		16 or 18

JUNIOR YEAR

Sociology 373 Field of Social Work	3	Sociology 333 Social Psychology	3
Sociology 343 Modern Social Problems	3	Sociology 463 Social Research	3
Psychology 123 Advanced General Psychology	3	Sociology 403 Social Casework	3
Foreign Language 213 Advanced Grammar and Reading	3	Foreign Language 223 Advanced Grammar and Reading	3
Elective	3	Elective	3
Elective (Crafts)	2	Elective (Crafts)	2
	17		17

SENIOR YEAR

Sociology 402 Sociology Seminar	2	Sociology 453 Supervised Field Work	3
Sociology 433 Group Work	3	Sociology (Elective)	3
Electives	12	Electives	9
	17		15

DESCRIPTION OF COURSES

123. Minorities in American Society. (Soc 123 Minorities) (3-0) Credit 3. I and II. The significance to American society of the presence of minorities, with special emphasis upon its meaning in relation to the present situation of the United States in world affairs. An introduction to the sociology of dominant-minority relations. (Note: This course is not counted toward the satisfaction of major and minor requirements without the approval of the head of the department.)

233. Rural Sociology. (Soc 233 Rural) (3-0) Credit 3. I. Analysis of structure and function of rural society, its people, institutions, communities, and problems. Prerequisites: Sociology 213 or Introduction to Social Science.

262-263. General Sociology. (Soc 262-263 General) (3-0) Credit 2 or 3. I or II. Fundamental concepts of Sociology and Social Problems for non-majors.

302. Sociology of Religion. (Soc 303 Religion) (2-0) Credit 2. General principles concerning the relationship of religion to society and morals. The role of religion as a unifying value scheme is emphasized.

303. The Family. (Soc 303 Family) (3-0) Credit 3. I or II. Nature and development of the family martial choice and adjustments and crises in family life. Points of view in recent literature.

333. Social Psychology. (Soc 333 Social Psych) (3-0) Credit 3. I. Personality development through personal-social and cultural-social conditioning; larger group relationships. Prerequisites: Soc. 213 and 223. Open to graduate students by special permission.

343. Modern Social Problems. (Soc 343 Mod Prom) (3-0) Credit 3. II. Analysis of processes of personal, family and community disorganization; methods and measures of social reform.

363. Cultural Anthropology. (Soc 363 Anthropology) (formerly 583 (3-0) Credit 3. I or II. A study of the origin and development of human culture. Special emphasis is upon schools of culture and contemporary culture. Prerequisite: Nine hours of Sociology. Open to graduate students.

372. Social Stratification in America. (Soc 372 Stratificatn) (3-0) Credit 3. I or II. A consideration of the research findings describing the American class structure. Special attention is given to the various strata, the determinants of membership in these strata, and the motives and attitudes that go with social position and with changes in position.

401-411. Readings in Sociology. (Soc 401-411 Readings) (1-0) Credit 1. Some of the classical essays and studies in sociology and selected readings in the field.

402. Sociology Seminar. (Soc 402 Seminar) (2-0) Credit 2. Course designed to integrate the major principles and areas of sociology to which the student has been exposed. Required for majors and minors.

423. Social Theory. (Soc 423 Social Thry) (formerly 513) (3-0) Credit 3. I. Historical development of theories of social science; the process by which sociology and the various social sciences came into systematic bodies of knowledge. Prerequisite: Twelve hours of Sociology.

463. Social Research. (Soc 463 Research) (formerly 563) (3-0) Credit 3. I. Technique of social investigation; case study, historical statistics and ecological techniques; student required to do one piece of social investigation. Prerequisite: Twelve hours of Sociology.

483. Juvenile Delinquency. (Soc 483 Delinquency) (3-0) Credit 3. I or II. Nature, extent, and conditions giving rise to juvenile delinquency; outstanding literature surveyed; programs treating delinquency discussed. Prerequiite: six hours of sociology.

SOCIAL SERVICE

373. Introduction to the Field of Social Work. (Soc 373 Social Wrk) (formerly 533) (3-0) Credit 3. I or II. Orientation courses in the history and field of Social Work; case work, group work, and social welfare planning as well as professional organization. Required for majors and minors in Social Service.

403. Introduction to Social Case Work. (Soc 403 Case Work) (3-0) Credit 3. I or II. The point of view of the social case worker regarding human relationships; appreciation of needs and problems causing individuals to seek help of social agencies: some understanding of the basic process of social case work practice; broad cultural as well as practical value to students going into social work, teaching (especially visiting teaching), Medicine, and related profession.

433. Introduction to Social Group Work. (Soc 433 Group Work) (3-0) Credit 3. I or II. Fundamentals of professional group work; group process and behavior; inter-personal relations; the contribution of allied fields, leadership, programs, and agencies as a background for employment, in-service training, or professional education.

443. History, Philosophy and Organization of the YMCA. (Soc 443 YMCA) (3-0) Credit 3. I or II. The origin of the YMCA and its development, changing aims, program, organization and philosophy, and consideration of trends and issues in the movement.

453. Supervised Field Work. (Soc 453 Field Work) (formerly 503) (3-0) Credit 3. I or II. Limited individual experience and controlled observation with established social agencies where social work techniques previously learned can be applied.

493. Problems of Child Welfare. (Soc 493 Chld Welfare) (3-0) (formerly 603) Credit 3. I or II. Child welfare movements and contemporary children's agencies and their services; programs for substitute care; safeguarding health; employment protection; delinquency prevention and other needs of children and youth.

INTEGRATED MINOR IN THE SOCIAL SCIENCES

(Teacher Certification)

Students may elect an integrated minor in the Social Sciences. This minor is planned primarily for teacher certification. Students who elect this program must complete the twenty-four semester hours of course work listed below with a "C" average or above. This program is exclusive of the six hours of American History and American Government which the college requires of all its students to complete.

The courses comprising the Social Science Minor are:

History 143 or 153	3
Economics 213 and 223	6
Pol. Science 213 and 383	6
Geography 163 or 173	3
Sociology 343	3
Social Science 383	3
	24

Any advisement in connection with this program may be secured from the Head of any of the participating Departments (Economics, Political Science, and Sociology).

Advisement for those persons who take the Integrated Social Science Minor and who major outside of the Departments of Economics, Political Science, and Sociology will be done by the person serving as Chairman of the Committee of Department Heads from the Departments of Economics, Political Science and Sociology.


ENGINEERING

School of Engineering

Engineering has been defined as "that art and science by which the properties of matter and sources of power in nature are made useful to man in structures, machines and manufactured products." It is a creative profession contributing to improvement of the social and economic order through technological advances and development. The strength of a nation and its continued prestige rests in a large part on its ability to maintain leadership in science and engineering.

Engineers transform basic resources in products useful in society in as economical manner as feasible. In the course of its activities, the engineering community utilizes scientific principles for the benefit of mankind and performs important functions within the industrial and business world.

To produce the structures, machines, and products of industry requires the application of scientific knowledge, the management of men, and the utilization of natural resources. The engineer is a practitioner. He brings to bear on each problem all available science and experience or judgment to arrive at the best possible solution. He combines the knowledge of what to do and how to do it with understanding of why he is doing it and of the significant results of his actions. He becomes not only an interpreter of science in terms of material human needs but also a manager of men, money, and materials in satisfying these needs.

Only through continued practice or exercise of judgment can one acquire the stature of an engineer. The successful engineer must develop sound judgment by his willingness to try, to recognize failures, and to keep trying until he arrives at a satisfactory solution.

The educational objective of the School of Engineering is to prepare its students to take positions of leadership commensurate with their abilities in a world where science, engineering, and human relations are of basic importance. Four year programs are offered in Architectural Engineering, Civil Engineering, Electrical Engineering, and Mechanical Engineering. Each leads to the degree of Bachelor of Science in the particular branch of the profession selected. These programs are especially planned to prepare students according to their aptitudes and desires, to become practicing engineers, administrators or teachers. But the useful knowledge and mental discipline gained from such educational programs are so broad and fundamental as to constitute excellent preparation for other careers. The programs lay a sound foundation of science, sufficiently broad and deep to enable graduates to enter into scientific investigation and at the same time to impart such knowledge of the usual engineering practice as will make graduates immediately useful in any subordinate position which they may be called.

Laboratory work under the supervision of experienced instructors and problem courses are provided so that the students may learn more readily the applications of the fundamentals learned to the solution of real engineering problems.

To profit satisfactorily by an engineering education, the student should have mental ability and alertness of high order, good health, and perseverance. The plainest indication of such ability is good grades in high school, particularly in mathematics and science.

The first semester's program is the same for all curricula. To a limited extent, substitutions may be made for courses listed as required when there appears to be a good reason for them. Each substitute must have the approval of the Dean of the School of Engineering.

THE GIBB GILCHRIST ENGINEERING BUILDING . . . Named in honor of the former A&M System Chancellor; houses the offices of the Dean of the School of Engineering, the engineering staff, the classrooms and laboratories of Architectural, Civil, Mechanical and Electrical Engineering.

SCHOOL OF ENGINEERING

FACILITIES

The Administrative offices, classrooms, drafting rooms and laboratories of the School of Engineering are housed in a new structure occupying over 25,000 square feet of floor space. Well equipped laboratories are available for electrical circuits and machinery, electronics, communication, surveying, materials testing, soil mechanics, fluid mechanics and hydraulics, heat power engineering which includes, engines, turbines, pumps and compressors, fuels and combustion, refrigeration and air conditioning, instrumentation and heat transfer. The building together with its equipment is valued at over one half million dollars.

OBJECTIVES

The aim of the School of Engineering is to impart a complete knowledge of the fundamentals of engineering with specialization in one particular branch to that extent which experience indicates to be desirable. The courses of study are planned with the view of giving the student basic training which he can not obtain after graduation. A great part of specialization is left to his later professional employment.

Architectural Engineering

The curriculum in Architectural Engineering is designed to give the student practical and theoretical training in Architecture and Building Construction. Although, it emphasizes the structural and mechanical phases of architecture, it includes architectural design, properties and uses of building materials, estimating construction costs, specification writing, and other phases important to the architectural profession. The training emphasizes the necessity of correlation in the architectural whole and lays a base for eventual practice as a consultant. The aim is to prepare men for careers in the construction industry as: Draftsmen, Designers, Estimators, and Building Supervisors, and provide them with the necessary foundation for future independent architectural practice.

Students selecting this option should get practical experience during the summer, either on construction projects or in the office of an architect or engineer.

Civil Engineering

Civil Engineering, originally named to distinguish it from military engineering, has always covered a wide field of engineering practice. It is usually referred to as the engineering of construction. All permanent construction planned and built by man to remain in a fixed location, is largely the responsibility of the civil engineer. Civil engineers plan, design, and supervise the construction of roads, bridges, dams, railroads, airfields, harbors, buildings, tunnels, waterways, canals, water supply and sewerage disposal systems, and many other facilities necessary for public works and industrial development. They plan the conservation, utilization, and control of water resources. They operate in the field of surveying and mapping. The civil engineer may work either in the design office or in field construction. The nature of civil engineer's work requires that he not only have a broad basic foundation in the physical sciences but also he must be alert to the economic and social significance of what he plans and builds. This aspect of his educational foundation has been a strong contributing factor in qualifying him for positions of leadership in both industry and government.

Electrical Engineering

Electrical Engineering is that branch of the engineering profession in which electrical phenomena are used to perform useful tasks. Examples are the generation, transmission and reception of information in such system as

telephone, television, radio, radar, computers, and data processing systems; the application of automatic controls, including automated production systems. All three of these areas are of great importance today.

The basic program of study for the B.S. degree has been carefully designed to provide the background of basic sciences, engineering sciences, and the analysis and design of representative systems essential to the development of engineering competence, as well as to provide a sound foundation for graduate study. In addition, the engineering sciences underlying other branches of engineering are included, so that the graduate may be prepared for broad responsibilities of supervising others.

Electrical engineering graduates are found in many areas of business, industry, government, and education. The range of activity includes planning, design, manufacturing, application, operation, research, development, and management. In modern practice the electrical engineer is frequently employed as a member of a team engaged in a coordinated program embracing scientific, design, and economic problems.

Mechanical Engineering

The mechanical engineer is concerned with the generation and use of power, the design and development of a wide variety of products, analysis, design, construction, and operation of machinery and equipment of all types, and methods of operation and manufacture. As such he engages in the design of automobiles and other transportation means; internal combustion engines, gas and steam turbines, pumping machinery, materials handling equipment; and heating, air conditioning and refrigeration equipment. He also plays a significant role in the development of nuclear power and in the operation of power plants. The mechanical engineer is employed in all industries. The varied nature of mechanical engineering demands a strong foundation in the basic sciences of mathematics, physics, and chemistry. To this the program adds study in the engineering sciences, thermodynamics, heat transfer, solid and fluid mechanics, electricity, and electronics. These fundamentals are then applied to the design, heat and power, and manufacturing aspects of mechanical engineering through lecture, laboratory, and design courses. The technical training is supplemented by a series of courses designed to provide an understanding of the human relationships in, and an appreciation of the economic factors essential to, the success of an industrial venture.

ADMISSION

In order to pursue the courses leading to degrees in engineering, the student must satisfy the entrance requirements as are prescribed on page 25 of this bulletin. Students who do not meet these requirements may make up the deficiencies during their first year in college.

Graduation Requirements

The requirements for graduation from the School of Engineering are the satisfactory completion of all courses in one of the prescribed curricula, with a "C" average, and an average of "C" in all courses taken in the School of Engineering.

Due to the rapid advances in engineering, the school may make changes from time to time in its curricula in order to maintain up to date educational programs. Students shall follow the prescribed outline of courses which were required at the time they entered a particular curriculum provided they graduate within a five year period. All substitution of courses must be approved by the Dean of the School prior to the time they are made.

Thesis Requirements

A comprehensive report on a special problem or engineering investigation will be required of all candidates for the Bachelor of Science degrees. The study must be done under the direction of a professor in the major department and may be from sources of engineering literature, experimental, or consist of a design project.

Inspection Trip

A one or two day inspection trip to a selected number of engineering projects, industrial installations, and manufacturing plants which represent typical examples of the practice of the various branches of engineering will be required of all engineering students for graduation. The prerequisite for going on an inspection tour is junior classification and the deposit of the predetermined prorated cost of the trip. A written report will be required.

OWNERSHIP OF STUDENT WORK

The School of Engineering reserves the right to retain, exhibit, and reproduce the work submitted by students for credit in any course.

ARCHITECTURAL ENGINEERING

FRESHMAN YEAR

First Semester	*Hrs.*	*Second Semester*	*Hrs.*
*Mathematics 115	5	Mathematics 125	5
College Algebra and Trigonometry		Analytical Geometry and Calculus	
Chemistry 114	4	English 123	3
Inorganic Chemistry		Reading and Composition	
General Engineering 113	3	Chemistry 124	4
Engineering Graphics I		Inorganic Chemistry	
General Engineering 112	2	Architectural Engineering 132	2
Engineering Problems		Architectural Graphics	
English 113	3	General Engineering 122	2
Grammar and Composition		Engineering Graphics II	
Military Science 112	2	Military Science 122	2
Elementary		Elementary	
Physical Education 111	1	Physical Education 121	1
Freshman Practice		Freshman Practice	
	20		19

SOPHOMORE YEAR

Mathematics 214	4	Mathematics 224	4
Differential Calculus		Integral Calculus	
Physics 215	5	Physics 225	5
Engineering Physics I		Engineering Physics II	
Civil Engineering 243	3	Civil Engineering 253	3
Engineering Mechanics I		Engineering Mechanics II	
Architectural Engineering 213	3	Architectural Engineering 223	3
Elements of Architecture		Elements of Architectural II	
Architectural Engineering 212	2	Architectural Engineering 222	2
Freehand Drawing I		Freehand Drawing II	
Military Science 212	2	Military Science 222	2
Elementary		Elementary	
Physical Education 211	1	Physical Education 221	1
Sophomore Practice		Sophomore Practice	
	20		20

SUMMER

History 173	3	History 183	3
American History		American History	
Political Science 113	3	Political Science 123	3
National Government		State Government	
	6		6

*Credit towards the degrees in engineering is not allowed for Mathematics 115. Students who show proficiency in this course will begin with Mathematics 125.

JUNIOR YEAR

First Semester	*Hrs.*	*Second Semester*	*Hrs.*
Civil Engineering 313 Mechanics of Materials I	3	Civil Engineering 343 Engineering Materials	3
Civil Engineering 321 Mechanics of Materials Laboratory	1	Architectural Engineering 343 History of Architecture II	3
Architectural Engineering 313 Architectural Design I	3	Architectural Engineering 383 Building Construction II	3
Architectural Engineering 353 Building Construction I	3	Architectural Engineering 323 Architectural Design II	3
Architectural Engineering 333 History of Architecture	3	Civil Engineering 354 Structural Analysis I	4
Architectural Engineering 363 Building Equipment I	3	Architectural Engineering 372 Building Equipment II	2
Civil Engineering 122 Surveying I	2	Military Science 324 Advanced	4
Military Science 312 Advanced	2		
	18 or 20		18 or 22

SENIOR YEAR

Economics 213 Principles of Economics	3	Mechanical Engineering 433 Environmental Engineering	3
English 213 Public Speaking	3	Architectural Engineering 473 Working Drawing and Specifications II	3
Architectural Engineering 463 Working Drawing and Specifications I	3	Civil Engineering 434 Structural Design	4
Civil Engineering 414 Reinforced Concrete	4	Architectural Engineering 432 Architectural Design III	2
Civil Engineering 433 Structural Analysis II	3	Civil Engineering 323 Soil Engineering and Foundations	3
Architectural Engineering 452 Architectural Practice	2	English 223 Introduction to Literature	3
Military Science 414 Advanced	4	Military Science 422 Advanced	2
	18 or 22		18 or 20

Number of hours required for graduation 146 exclusive of required Military Science and Physical Education.

CIVIL ENGINEERING

FRESHMAN YEAR

*Mathematics 115 College Algebra and Trigonometry	5	Mathematics 125 Analytical Geometry and Calculus	5
Chemistry 114 Inorganic Chemistry	4	English 123 Reading and Composition	3
General Engineering 113 Engineering Graphics I	3	Chemistry 124 Inorganic Chemistry	4
General Engineering 112 Engineering Problems	2	Civil Engineering 122 Surveying I	2
English 113 Grammar and Composition	3	General Engineering 122 Engineering Graphics II	2
Military Science 112 Elementary	2	Mathematics 162 Introduction to Computational Processes	2
Physical Education 111 Freshman Practice	1	Military Science 122 Elementary	2
	20	Physical Education 121 Freshman Practice	1
			21

SUMMER

Civil Engineering 212 Surveying II	2
Civil Engineering 223 Surveying III	3
	5

*Credit towards the degrees in engineering is not allowed for Mathematics 115. Students who show proficiency in this course will begin with Mathematics 125.

SOPHOMORE YEAR

First Semester	*Hrs.*
Mathematics 214 Differential Calculus	4
Physics 215 Engineering Physics I	5
English 213 Public Speaking	3
Civil Engineering 243 Engineering Mechanics I	3
History 173 American History	3
Military Science 212 Elementary	2
Physical Education 211 Sophomore Practice	1
	21

Second Semester	*Hrs.*
Mathematics 224 Integral Calculus	4
Physics 225 Engineering Physics II	5
History 183 American History	3
Civil Engineering 253 Engineering Mechanics II	3
English 223 Introduction to Literature	3
Military Science 222 Elementary	2
Physical Education 221 Sophomore Practice	1
	21

JUNIOR YEAR

Civil Engineering 313 Mechanics of Materials	3
Mathematics 413 Differential Equations	3
Political Scene 113 National Government	3
Civil Engineering 353 Engineering Geology	3
Mechanical Engineering 313 Thermodynamics I	3
Economics 213 Principles of Economics	3
Military Science 312 Advanced	2
	18 or 20

Civil Engineering 322 Advanced Mechanics of Materials	2
Civil Engineering 354 Structural Analysis I	4
Civil Engineering 321 Mechanics of Materials Laboratory	1
Civil Engineering 343 Engineering Materials	3
Civil Engineering 364 Fluid Mechanics	4
Civil Engineering 323 Soil Engineering and Foundations	3
Mechanical Engineering 321 Mechanical Engineering Laboratory	1
Military Science 324 Advanced	4
	18 or 22

SENIOR YEAR

Civil Engineering 422 Contracts, Specifications and Engineering Reports	2
Civil Engineering 442 Engineering Construction	2
Civil Engineering 454 Transportation Engineering	4
Civil Engineering 433 Structural Analysis II	3
Civil Engineering 463 Hydraulic Engineering	3
Civil Engineering 414 Reinforced Concrete	4
Military Science 414 Advanced	4
	18 or 22

Electrical Engineering 304 Principles of Electrical Engineering	4
General Engineering 313 Engineering Economy	3
Civil Engineering 424 Water Supply and Sewerage Engineering	4
Civil Engineering 434 Structural Design	4
Political Science 123 State Government	3
Military Science 422 Advanced	2
	18 or 20

Number of hours required for graduation 143 exclusive of required Military Science and Physical Education.

ELECTRICAL ENGINEERING

FRESHMAN YEAR

First Semester	*Hrs.*
*Mathematics 115 College Algebra and Trigonometry	5
Chemistry 114 Inorganic Chemistry	4
General Engineering 113 Engineering Graphics I	3
General Engineering 112 Engineering Problems	2
English 113 Grammar and Composition	3
Military Science 112 Elementary	2
Physical Education 111 Freshman Practice	1
	20

Second Semester	*Hrs.*
Mathematics 125 Analytical Geometry and Calculus	5
English 123 Reading and Composition	3
Chemistry 124 Inorganic Chemistry	4
General Engineering 122 Engineering Graphics II	2
History 173 American History	3
Military Science 122 Elementary	2
Physical Education 121 Freshman Practice	1
	20

SOPHOMORE YEAR

Political Science 113 National Government	3
Mathematics 214 Differential Calculus	4
Physics 215 Engineering Physics I	5
English 213 Public Speaking	3
Civil Engineering 243 Engineering Mechanics I	3
Military Science 212 Elementary	2
Physical Education 211 Sophomore Practice	1
	21

Electrical Engineering 213 Basic Electrical Engineering	3
Mathematics 224 Integral Calculus	4
Physics 225 Engineering Physics II	5
Civil Engineering 253 Engineering Mechanics II	3
English 223 Introduction to Literature	3
Military Science 222 Elementary	2
Physical Education 221 Sophomore Practice	1
	21

SUMMER

History 183 American History	3
Political Science 123 State Government	3
	6

JUNIOR YEAR

Electrical Engineering 315 AC Circuits	5
Electrical Engineering 333 Energy Conversion I	3
Mathematics 413 Differential Equations	3
Civil Engineering 313 Mechanics of Materials	3
Electrical Engineering 344 Electronics I	4
Military Science 312 Advanced	2
	18 or 20

Electrical Engineering 323 Circuit Analysis	3
Mathematics 473 Advanced Mathematics for Engineers	3
Electrical Engineering 373 Electrical Measurements	3
Electrical Engineering 384 Electronics II	4
Civil Engineering 343 Engineering Materials	3
Mathematics 162 Introduction to Computational Processes	2
Military Science 324 Advanced	4
	18 or 22

*Credit towards the degrees in engineering is not allowed for Mathematics 115. Students who show proficiency in this course will begin with Mathematics 125.

SENIOR YEAR

First Semester	*Hrs.*
Electrical Engineering 413 Energy Conversion II	3
Electrical Engineering 433 E.ectromagnetic Fields and Waves	3
Electrical Engineering 453 Solid State Electronics and Semiconductor Devices	3
Electrical Engineering 443 Transmission Lines and Network Theory	3
Mechanical Engineering 313 Thermodynamics I	3
Economics 213 Principles of Economics	3
Military Science 414 Advanced	4
	18 or 22

Second Semester	*Hrs.*
Electrical Engineering 423 Energy Conversion III	3
Mechanical Engineering 463 Industrial Management or	3
General Engineering 313 Engineering Economy	3
Civil Engineering 321 Mechanics of Materials Laboratory	1
Electrical Engineering 463 Design of Digital Computers or	3
Physics 314 Modern Physics	4
Mechanical Engineering 321 Mechanical Engineering Laboratory I	1
Electrical Engineering 473 Servomechanisms and Control systems	3
Electrical Engineering 483 High Frequency and Microwave Devices	3
Miltary Science 422 Advanced	2
	17 or 19

Number of hours required for graduation 142 exclusive of required Military Science and Physical Education.

MECHANICAL ENGINEERING

FRESHMAN YEAR

*Mathematics 115 College Algebra and Trigonometry	5
Chemistry 114 Inorganic Chemistry	4
General Engineering 113 Engineering Graphics I	3
General Engineering 112 Engineering Problems	2
English 113 Grammar and Composition	3
Military Science 112 Elementary	2
Physical Education 111 Freshman Practice	1
	20

Mathematics 125 Analytical Geometry and Calculus	5
English 123 Reading and Composition	3
Chemistry 124 Inorganic Chemistry	4
General Engineering 122 Engineering Graphics II	2
Mathematics 162 Introduction to Computational Processes	2
Mechanical Engineering 111 Manufacturing Processes	1
Military Science 122 Elementary	2
Physical Education 121 Freshman Practice	1
	20

*Credit towards the degrees in engineering is not allowed for Mathematics 115. Students who show proficiency in this course will begin with Mathematics 125.

SOPHOMORE YEAR

Mathematics 214 Differential Calculus	4
Physics 215 Engineering Physics I	5
History 173 American History	3
English 213 Public Speaking	3
Civil Engineering 243 Engineering Mechanics I	3
Military Science 212 Elementary	2
Physical Education 211 Sophomore Practice	1
	21

Mathematics 224 Integral Calculus	4
Physics 225 Engineering Physics II	5
English 223 Introduction to Literature	3
Civil Engineering 343 Engineering Materials	3
Civil Engineering 253 Engineering Mechanics II	3
Military Science 222 Elementary	2
Physical Education 221 Sophomore Practice	1
	21

SUMMER

History 183 American History	3
Political Science 113 National Government	3
	6

JUNIOR YEAR

First Semester	*Hrs.*
Civil Engineering 313 Mechanics of Materials	3
Economics 213 Principles of Economics	3
Civil Engineering 321 Mechanics of Materials Laboratory	1
Electrical Engineering 403 Electrical Circuits and Machinery I	3
Mathematics 413 Differential Equations	3
Mechanical Engineering 211 Metallurgy	1
Mechanical Engineering 313 Thermodynamics I	3
Mechanical Engineering 321 Mechanical Engineering Laboratory I	1
Military Science 312 Advanced	2
	18 or 20

Second Semester	*Hrs.*
Civil Engineering 322 Advanced Mechanics of Materials	2
Electrical Engineering 493 Electrical Circuits and Machinery II	3
Mechanical Engineering 333 Mechanics of Machinery	3
Civil Engineering 364 Fluid Mechanics	4
Mathematics 473 Advanced Mathematics for Engineers	3
Mechanical Engineering 323 Thermodynamics II	3
Military Science 324 Advanced	4
	18 or 22

SENIOR YEAR

Electrical Engineering 334 Electronics I	4
Mechanical Engineering 413 Machine Design I	3
Mechanical Engineering 412 Mechanical Engineering Laboratory II	2
Mechanical Engineering 423 Thermodynamic Systems Analysis	3
Mechanical Engineering 343 Internal Combustion Engines	3
Mechanical Engineering 473 Heat Transfer	3
Military Science 414 Advanced	4
	18 or 22

Mechanical Engineering 453 Mechanical Vibration	3
Mechanical Engineering 433 Environmental Engineering	3
Political Science 123 State Government	3
Mechanical Engineering 463 Industrial Management or	3
General Engineering 313 Engineering Economy	3
Mechanical Engineering 442 Machine Design II	2
Mechanical Engineering 483 Aircraft and Missile Propulsion	3
Mechanical Engineering 421 Mechanical Engineering Laboratory III or	1
Physics 314 Moredn Physics	4
Military Science 422 Advanced	2
	18 or 20

Number of hours required for graduation 143 exclusive of required Military Science and Physical Education.

DESCRIPTION OF COURSES

ARCHITECTURAL ENGINEERING

132. Architectural Graphics. (Arch 132 Art Graphic) (0-6) Credit 2. Introduction to architectural drawings; preparation for graphically presenting subsequent drawing and design problems; emphasis placed on the study of shades and shadows of geometrical solids and architectural elements; the study of the theory of perspectives as related to architectural presentation. Prerequisite: General Engineering 113.

212-222. Freehand Drawing. (Arch 212, 222 Frhd Drawing) (0-6) Credit 2. I and II. Development of the student's sensitivity to form, space, structure, light, texture, scale, proportion, and color and of the discipline of rapid, accurate, and explicit visual communication through the various drawing media with subjects taken from architecture, landscape architecture and life models.

213-223. Elements of Architecture. (Arch 213, 223, Elements) (0-9) Credit 3. I and II . A study of the fundamentals of architectural design by their application and presentation in the original solutions to simple problems in space organization.

313-323. Architectural Design. (Arch 313, 323, Design) (0-9) Credit 3. I and II. A study of the principles of architectural design, program analysis, the relation of function, structure and methods of construction to architectural space through the original solutions to advanced problems in design.

333-343. History of Architecture. (Arch 333, 343, History) (3-0) Credit 3. I and II. The development of architecture as related to human habitation; ancient, medieval, and modern architecture, with special attention to their relevance to current problems in the design of the urban environment.

353. Building Construction I. (Arch 353 Construction) (3-0) Credit 3. I. An introduction to the properties and uses of materials of construction; a study of the methods of construction; occasional visits to buildings under construction.

363. Building Equipment I. (Arch 363 Bldg Equip) (3-0) Credit 3. I. A study of water supply and equipment; plumbing and drainage; sanitation systems, an introduction to heating and air conditioning design and equipment.

372. Building Equipment II. (Arch 372 Bldg Equip) (2-0) Credit 2. II. Continuation of AE 363; study of of the theory and design of air conditioning; mechanical and electrical equipment for buildings; wiring and illumination; acoustics for buildings. Prerequisite: Architectural Engineering 363.

383. Building Construction II. (Arch 383 Construction) (3-0) Credit 3 II. An introduction to the fundamentals of the various structural systems; including their structural, economic, and aesthetic values as applied to architecture; the design and drawing of the structural parts of buildings in wood, steel, masonry, and concrete with stress on the usage of various structural forms and materials. Prerequisite: Architectural Engineering 353.

432. Architectural Design. (Arch 432 Design) (0-6) Credit 2. II. Continuation of Architecture 423, advanced problems, time problems, and rapid sketches at frequent intervals.

452. Architectural Practice. (Arch 452 Practice) (2-0) Credit 2. I. Special problems in architectural design and development; the preparation of building documents; interpretation of documents of the American Institute of Architects; office organization, client and contractor relationships; study of building codes and zoning regulations.

463. Working Drawings and Specifications I. (Arch 463 Specificatn) (0-9) Credit 3. I. An introduction to working drawings of small wall-bearing structures in wood and masonry, and fundamentals of specifications. Prerequisites: Architecture 383 and registration in Civil Engineering 354.

473. Working Drawings and Specifications II. (Arch 473 Specificatn) (0-9) Credit 3. II. Preparation of complete working drawings in steel and reinforced concrete with stress upon the architectural, structural and mechanical sections of drawings; detailed specifications, quantity surveys, cost estimates, and construction procedures and methods. Prerequisites: Architecture 363 and registration in Civil Engineering 424.

CIVIL ENGINEERING

122. Surveying I. (CE 122 Surveying I) (0-6) Credit 2. I and II. Use of tape and chain, engineer's level and transit; methods of surveying in field practice. Prerequisites: General Engineering 113 and Mathematics 115 or 123. Lab. fee: $2.00.

212. Surveying II. (CE 212 Surveying II) (0-6) Credit 2. S. Use of tape, transit and level; complete topographic surveys, using the stadia method and

plane table; astronomical observations for azimuth, time and latitude; drafting of topographic maps from field notes. Prerequisite: Civil Engineering 122. Lab. fee: $2.00.

223. Surveying III. (CE 223 Survey III) (1-6) Credit 3. S. Horizontal vertical alignment for railways and highways; grades reduction; curves, turnouts, and earthwork, principles of economic location surveys, plans and estimates. Prerequisite: Civil Engineering 212. Lab. fee: $2.00.

243. Engineering Mechanics I. (CE 243 Mechanics I) (3-0) Credit 3. II. Composition and resolution of forces; systems of forces in equilibrium; laws of friction; centers of gravity; moments of inertia; special problems to illustrate the application of theory to engineering. Prerequisite: Enrollment in Physics 215 and Mathematics 214.

253. Engineering Mechanics II. (CE 253 Mechanics II) (3-0) Credit 3. II. Velocities and accelerations of various types of mechanics, rectilinear, and curvilinear translation of particles and rigid bodies, rotation of rigid bodies about fixed axis, work energy and power, impulse and momentum, movements and products of inertia, and elementary problems in vibration. Prerequisite: Civil Engineering 243.

313. Mechanics of Materials. (CE 313 Mechanics) (0-3) Credit 3. I. Engineering properties and behavior of standard engineering materials in stress strain tension and compression, torsion, shear, and moment, combined stresses and deflection; rivited joints, stresses in columns and the design of beams; use of engineering handbooks. Prerequisite: Civil Engineering 243.

321. Mechanics of Materials Laboratory. (CE 321 Mech Lab) (0-3) Credit 1. I and II. Determination of selected mechanical properties of several engineering materials including iron-carbon alloys, aluminum alloys, concrete, wood, and plastics; relationship between structure and mechanical properties of these materials; elementary problems in experimental stress analysis and structural behavior; test procedures, instrumentation and interpretation of results. Prerequisite: Enrollment in Civil Engineering 313.

322. Advanced Mechanics of Materials. (CE 322 Adv Mech) (2-0) Credit 2. II. Introduction to advanced problems in the elastic regime. Biaxial stress and strain, theories of failure, thick cylinders, unsymetrical bending, rotating disks, shells, flat plates, energy methods and buckling. Prerequisite: Civil Engineering 313.

323. Soil Engineering Foundations. (CE 323 Soil Engr) (2-3) Credit 3. II. Description, origin, structure, identification and classification of soils for engineering purposes; determination and application of their physical properties; the design and construction of foundations for pavements, buildings, and bridges. Prerequisite: Civil Engineering 313.

343. Engineering Materials. (CE 343 Materials) (3-0) Credit 3. II. Engineering requirement of materials; arrangements of atoms in materials; metallic and ceramic phases and their properties; polymers, multiphase equilibrium and nonequilibrium relationships; modification of properties through changes in microstructure; stability under service stresses, thermal behavior in service, corrosion; behavior in electromagnetic fields; effect of radiation on materials. Prerequisite: Chemistry 114 and Physics 225.

353. Engineering Geology. (CE 353 Geology) (3-0) Credit 3. II. A study of minerals, rock identification and earth history. Geological processes; earth surface and crust; sources of engineering materials; interpretation of topographical and geological maps; geology of water supply; earthquakes, topography and geological suitability of engineering construction sites. Prerequisite: Chemistry 124.

354. Structural Analysis I. (CE 354 Analysis I) (3-3) Credit 4. II. Loads, reactions and force systems; algebraic and graphical computations of reactions and stresses; roof and bridge truss analysis; introduction to moment distribution methods, moving loads; emphasis on statically determinate structures.

364. Fluid Mechanics. (CE 364 Fluids) (3-3) Credit 4. I. The laws governing the action of fluids at rest and in motion, as related to engineering problems; the measurement of the flow of fluids; the description and theory of reaction turbines, impulse wheels and centrifugal pumps. Laboratory work includes measurement of flow, friction in pipes; pumping, and power. Prerequisite or parallel: Civil Engineering 243. Lab fee: $2.00.

414. Reinforced Concrete. (CE 414 Concrete) (3-3) Credit 4. I. Properties of concrete, effect of water cement ratio, design of beams and floor systems; rigid frame construction, columns, retaining walls, masonry dams, and footings. Prerequisite: Civil Engineering 313.

422. Contracts, Specifications and Engineering Reports. (CE 422 Contracts) (2-0) Credit 2. I. A study of contracts, specifications and reports required by engineers; preparation of documents. Prerequisite: Senior standing.

424. Water Supply and Sewerage Engineering. (CE 424 Sewerage) (2-6) Credit 4. II. Qualities of water and sewerage; underground water; water distribution and sewerage collection systems; pumps; water treatment plants; sewerage treatment plants; elements of design of simple systems and their operation. Prerequisite: Civil Engineering 364. Lab. fee: $2.00.

433. Structural Analysis II. (CE 433 Analysis II) (3-0) Credit 3. I. Continuation of Civil Engineering 354, including stresses in statically indeterminant structures, secondary stresses and stressed-skin structures; stresses in suspension and steel-arch bridges, rigid and space frames. Prerequisite: Civil Engineering 354.

434. Structural Design. (CE 434 Design) (2-6) Credit 4. II. Design of Civil Engineering structures. Welded and riveted connections. Working drawings, including the necessary details for actual construction, economic considerations, the correlation of analysis and design. Mostly steel and timber structures. Prerequisite: Civil Engineering 433.

442. Engineering Construction. (CE 442 Construction) (2-0) Credit 2. I. Modern methods of construction history, organization, management, planning, and construction machinery; importance of working drawings, programming and economy of good planning; importance of inspection and checks; includes visits to works and reports on such visits. Prerequisite: Senior standing.

453. Transportation Engineering. (CE 453 Transportatn) (3-0) Credit 3. I. Highway laws and the administration of street and highway improvements; the design and construction of streets; railroads, and highways, and airports. Prerequisite: Civil Engineering 323.

463. Hydraulic Engineering. (CE 463 Hydraulic) (3-0) Credit 3. I. Application of the principles of fluid mechanics to the control and utilization of water; river and flood control, dams, power development, pipe networks, open channel flow, uniform and non-uniform flow, spillways, and culvert design, and hydraulic model studies.

ELECTRICAL ENGINEERING

213. Basic Electrical Engineering. (EE 213 Basic) (3-0) Credit 4. II. Introduction to the fundamental principles underlying all branches of electrical engineering; the analysis of electric, magnetic, and electrostatic circuits. Prerequisites or parallel: Physics 225 and Mathematics 224.

304. Principles of Electrical Engineering. (EE 304 Principles) (3-3) Credit 4. The fundamental principles of direct-current and alternating-current circuits and machinery. Prerequisite: Physics 225. Lab fee: $2.00.

315. Alternating Current Circuits. (EE 315 A C Circuits) (5-0) Credit 5. I. A mathematical treatment of alternating-current phenomena in single and polyphase circuits. Prerequisite: Electrical Engineering 213; prerequisite or parallel: Mathematics 413.

323. Circuit Analysis. (EE 323 Circ Analysis) (3-0) Credit 3. II. Steady state and transient analysis of circuits, employing differential equations, vector analysis and transforms. Prerequisites: Electrical Engineering 315 and Mathematics 413.

333. Energy Conversion I. (EE 333 Energy I) (2-3) Credit 3. I. Principles of operation and characteristics of direct-current generators and motors. Laboratory experiments on characteristics of direct-current machines. Prerequisites: Electrical Engineering 213.

344-384. Electronics I and II. (EE 344, 384 Electronics) (3-3) Credit 4. I and II. Fundamental principles of electronic tubes; study of electronic circuits, amplifiers, oscillators, and rectifiers. Prerequisite or parallel: Electrical Engineering 213. Lab fee: $3.00.

373. Electrical Measurements. (EE 373 Measurements) (2-3) Credit 3. II. Methods for electrical and magnetic measurements; resistance, capacity, electromotive force, current, inductance, watts, and energy. Prerequisite: Electrical Engineering 315.

403. Electric Circuits and Machinery I. (EE 403 Circuit Mach) (2-3) Credit 3. I. Fundamentals of electric, magnetic, and electrostatic circuits, direct-current circuits and machinery, and alternating-current circuits. Prerequisite: Physics 225 and Mathematics 224. Lab fee: $2.00.

413-423. Energy Conversion II and III. (EE 413, 423 Energy II, III) (2-3) Credit 3. I and II. Principles of design, construction, and operating of transformers, alternating-current generators, polyphase induction motors, synchronous motors, converters, rectifiers, and accessory apparatus. Laboratory work includes experiments illustrating the characteristics of alternating-current circuits and transformers. Prerequisite: Electrical Engineering 315.

433. Electromagnetic Fields and Waves. (EE 433 Electro Flds) (3-0) Credit 3. I. Solution of field problems, principles of guided and free electromagnetic wave propagation including generation, radiation, reflection and reception. Prerequisite: Electrical Engineering 323.

443. Transmission Lines and Networks. (EE 443 Trans Lines) (2-3) Credit 3. I. Symetrical components, lumped constants and distributed constants; circuits as applied to transmission lines and general network theory including wave filters and impedance matching. Prerequisites: Electrical Engineering 315 and Mathematics 413.

453. Solid State Electronics and Semiconductor Devices. (EE 453 Solid State) (2-3) Credit 3. I. Principles and applications of conduction in semiconductor devices. Typical applications include amplifiers, oscillators, rectifiers and switching. Prerequisites: Electrical Engineering 384 and Mathematics 413.

463. Design of Digital Computers. (EE 463 Computers) (3-0) Credit 3. II. An introduction to the art and science of designing digital systems with treatment on binary arithmetic, Boolean Algebra, transistor and diode switches, and logic circuits; also introductory materials on computer programming. Prerequisite: Electrical Engineering 453.

473. Servomechanisms and Control Systems. (EE 473 Control Sys) (3-0) Credit 3. II. Design of automatic control systems including mathematical theory. Prerequisites: Electrical Engineering 384 and Mathematics 413.

483. High Frequency and Microwave Devices (EE 483 Microwaves) (2-3) Credit 3. II. An introduction to the theory and practice of ultra high frequency wave generation, detection, transmission, radiation, and measurement. Development of Maxwell's equations and their applications. Prerequisites: Electrical Engineering 384 and Mathematics 413.

493. Electric Circuits and Machinery II. (EE 493 Circuit Mach) (2-3) Credit 3. II. Polyphase circuits, transformers, alternating-current machines, and circuits. Prerequisite: Electrical Engineering 403.

GENERAL ENGINEERING

112. Engineering Problems. (GE 112 Introduction) (2-0) Credit 2. I. An introduction to the engineering profession; the development of skills and orderly methods of solving problems involving computations of an engineering character. Basic calculating techniques, and the application of mathematics to the solution of engineering problems.

113. Engineering Graphics I. (GE 113 Graphics I) (1-6) Credit 3. I. Use of drafting instruments; freehand Gothic and Roman lettering (vertical and inclined); introductory orthographic projection; isometric drawings; freehand technical sketching, dimensioning, and tracing with pencil on vellum tracing paper, and in ink on tracing cloth.

122. Engineering Graphics II. (GE 122 Graphics II) (0-6) Credit 2. II. Principles of descriptive geometry, as related to the projection of points, lines, planes, and solids, and their applications to problems of engineering and architecture; development, intersections, double curved and warped surfaces. Prerequisite: Engineering Graphics 113.

212. Engineering Graphics III. (GE 212 Graphics III) (0-6) Credit 2. I. Review of orthographic projection; working drawings; isometric, oblique, perspective, topographical, and instrumental drawings; charts, and diagrams, wiring diagrams, structural drafting, and an introduction to graphical mathematics and nomography. Prerequisite: General Engineering 122.

313. Engineering Economy. (GE 313 Economy) (3-0) Credit 3. I. Evaluation of engineering, alternatives, economic significance of engineering proposals; interest, depreciation, fixed, operating, and other costs, capital management, risks, elements of economic analysis, and forecasting. Prerequisite: Economics 203 or 213.

MECHANICAL ENGINEERING

111. Manufacturing Processes. (ME 111 Mfg Process) (0-3) Credit 1. II. Technical aspects of modern industrial processes employed in the transformation of engineering materials. Basic mechanics of metal forming and machining including machine operations, welding, and foundry. Emphasis on material and process capability and suitability. Lab fee: $2.00.

211. Metallurgy. (ME 211 Metallurgy) (1-2) Credit 1, I. Studies of the structure and properties of engineering alloys, physical changes occurring during heat treatment and fabrication of metals. One hour recitation and two hours laboratory a week. Prerequisite: Chemistry 125.

313. Thermodynamics I. (ME 313 Thermodyn I) (3-0) Credit 3. I. Transformation of energy, theoretical limitations; second law, absolute temperature, entropy and available energy; properties of gases, liquids, vapors and vapor mixtures. Prerequisites: Mathematics 224 and Physics 215.

321. Mechanical Engineering Laboratory I. (ME 321 Engr Lab I) (0-3) Credit 1. II. Theory and application of mechanical engineering measurements. Prerequisite: Mechanical Engineering 313.

323. Thermodynamics II. (ME 323 Thermodyn II) (3-0) Credit 3. II. Continuation of Thermodynamics I, including modern power cycles, fluid flow, gas turbine cycles and jet propulsion, refrigeration, and an introduction to heat transfer. Prerequisite: Mechanical Engineering 313.

333. Mechanics of Machinery. (ME 333 Mechanism) (3-0) Credit 3. I. Elements of machinery with references to the transmission of motion, and force, cams, gears; graphical construction; kinetics; balancing; arrangement in actual machines; velocities, accelerations, working and inertia forces in machine parts; critical speeds and vibrations. Prerequisite: Civil Engineering 253.

343. Internal Combusion Engines. (ME 343 Engines) (3-0) Credit 3. II. Fundamentals of internal combustion engines; cycles capacity, efficiency, thermodynamics, combustion and operating conditions. Prerequisite: Mechanical Engineering 313.

412. Mechanical Engineering Laboratory II. (ME 412 Engr Lab II) (0-6) Credit 2. I. Analysis of heat transfer and fluid flow processes, mechanical systems, automatic control, instrumentation, design of experiments and testing mechanical equipment. Prerequisites: Mechanical Engineering 321 and 323. Lab fee: $2.00.

413. Machine Design I. (ME 413 Mach Design) (3-0) Credit 3. I. The theory and practice of machine design applied to various machine parts such as columns, screws, shafts, bearings, brakes, springs, fastenings, friction and lubrication, power transmission, and an introduction to machine vibration. Prerequisites: Civil Engineering 313 and registration in Mechanical Engineering 333.

421. Mechanical Engineering Laboratory III. (ME 421 Engr Lab III) (0-3) Credit 1. II. Continuation of Mechanical Engineering 412; Experimental and development testing of Mechanical Equipment. Prerequisite: Mechanical Engineering 412.

423. Thermodynamic System Analysis. (ME 423 Thermodyn) (3-0) Credit 3. II. A study of the thermodynamic analysis of energy conversion with emphasis on design of power plants including the selection of equipment. The course deals basically with the steam plant but also covers gas, hydroelectric and nuclear plants with special emphasis on the economic aspects of the design. Prerequisite: Mechanical Engineering 323.

433. Environmental Engineering. (ME 433 Environmentl) (3-0) Credit 3. II. A study of heat transmission, psychometrics, ventilation, air analysis and air conditioning including the design of heating, ventilating, and air conditioning systems. Prerequisite: Mechanical Engineering 313.

442. Machine Design II. (ME 442 Mach Design) (0-6) Credit 2. II. Calculations and drawings for a number of simple machines and machine parts including both graphical and analytical analyses. Prerequisite: Mechanical Engineering 413.

453. Mechanical Vibration. (ME 453 Vibration) (3-0) Credit 3. I. A general consideration of free and forced vibration of linear and non-linear systems for various degrees of freedom, undamped and damped systems, critical speeds, and vibration isolation, and vibration of elastic bodies. Prerequisites: Mathematics 413 and Mechanical Engineering 333.

463. Industrial Management. (ME 463 Indus Mgnt) (3-0) Credit 3. II. Problems of the industrial executive; organization, plant location; section and arrangement of buildings and equipment; production planning and control; simplification and standardization; control of inventory and cost; personnel problems, and business policy. Prerequisite: Junior standing in engineering.

473. Heat Transfer. (ME 473 Heat Transfr) (3-0) Credit 3. II. Heat transfer principles and apparatus applied to power production and utilization. Prerequisite: Mechanical Engineering 323.

483. Aircraft and Missile Propulsion. (ME 483 Propulsion) (3-0) Credit 3. II. Analysis of aircraft and missile propulsion systems; fundamentals of jet propulsion, including rocket engines. Prerequisites: Mechanical Engineering 323 and Mathematics 413.

School of Home Economics

GENERAL INFORMATION

All curricula in the School of Home Economics are designed to provide a well rounded college education, as well as home economics education in the specialized areas. This is accomplished through courses in mathematics, English, speech, social sciences, psychology, physical and biological sciences.

The School of Home Economics is organized into four major departments:

Clothing and Textiles
Food and Nutrition (including Dietetics and Institutional Administration)
Home Economics Education
Household Economics and Child Development (including Family Living)

These departments provide both general and professional education, with primary objectives of education for personal development and family living, effective citizenship, and preparations for a professional career. Majors and/or minors are offered in all of the fields.

A common core of Home Economics subjects, valuable in preparation for home and family life, is required in all majors. Not only are the courses planned for those whose main interest is in family living, but also for students who wish professional preparation for:

1. Teaching home economics in high schools and in extension
2. Teaching preschool children
3. Professional careers in hospital dietetics, institutional management or in business
4. Teaching in college after Graduate level courses
5. Careers in Public Health

FACILITIES

The School of Home Economics is located in the May Home Economics Building, on Fifth Street. It provides laboratories, class and lecture rooms, and offices. Adjacent to the Home Economics Building is the Home Management House where senior students gain practical experience in many aspects of family living with specific emphasis upon problems which are managerial in nature.

The Preschool Laboratory, located on Avenue C, north of the Home Economics Building, provides opportunities for junior and senior students to gain experience in studying the behavior and development of young children and child guidance procedures.

STUDENT ORGANIZATIONS

Home Economics Club — Open to all Home Economics students; affiliated with the College Club Section of the American Home Economics Association, and the Texas Home Economics Association.

Charm Club — Honor society for Home Economics majors and minors.

Kappa Omicron Phi — A chapter of the national professional honor society; sophomore, junior and senior students are elected to membership based on scholarship, leadership and personal characteristics.

REQUIREMENTS FOR GRADUATION

A total of at least 132 semester hours and 264 grade points is required for the degree of Bachelor of Science in Home Economics. To remain in good

ELIZABETH C. MAY HOME ECONOMICS BUILDING . . . Named in honor of the former Dean of the School of Home Economics, it houses the Dean and her staff's offices, laboratories and classrooms, and the office of the Dean of the School of Nursing.

standing a student is expected to maintain an average of 2.0 and present this or a higher average when applying for graduation.

STUDENT ADVISERS

Upon admission each student is assigned an adviser in the School of Home Economics who assists with plans for the college program and counsels on problems related to college life.

HOME ECONOMICS CURRICULA

Each student must choose a major in Home Economics, upon admission. Requirements for the major are no less than 46 and no more than 56 semester hours in Home Economics courses. The required courses as listed in the following sequences may be shifted from one semester to another, or even from one year to another, upon the recommendation of the adviser.

It is possible for persons in all majors to prepare for teaching in the High School by taking the required professional courses and by including the required courses in Home Economics upon consultation with the adviser.

SUGGESTED CURRICULUM FOR HOME ECONOMICS EDUCATION

FRESHMAN YEAR

First Semester	*Hrs.*	*Second Semester*	*Hrs.*
Chemistry 114 Inorganic Chemistry	4	Chemistry 124 Inorganic and Qualitative	4
English 113 Grammar and Composition	3	English 123 Reading and Composition	3
Mathematics 173 Applied Mathematics	3	Physical Education 121 Freshman Practice	1
Physical Education 111 Freshman Practice	1	Home Economics 123 Family Life Education	3
Household Economics 123 Introduction to Family Economics	3	Foods 123 Elementary Nutrition	3
Art 113 Elementary Design	3	Clothing 103 Textiles	3
	17		17

SOPHOMORE YEAR

History 173 United States 1492 to 1876	3	Political Science 123 State Government	3
Political Science 113 National Government	3	English 223 Introduction to Literature	3
Clothing 124 Clothing for the Family	4	Physical Education 221 Sophomore Practice	1
English 213 Public Speaking	3	Foods 223 Family Nutrition	3
Physical Education 211 Sophomore Practice	1	History 183 United States 1877 to Present	3
Mathematics 183 Applied Mathematics	3	Household Economics 283 Personal and Family Finance	3
	17	Economics 203 Survey of Economics	3
			19

JUNIOR YEAR

Biology 304 Physiology	4	Sociology 303 The Family	3
Clothing 313 Tailoring for Women	3	Household Economics 393 House Planning, Furnishings and Equipment	3
Home Economics Education 313 Developing a Functional Program in Home Economics	3	Foods 323 Meal Planning, Preparartion and Service	3
Child Development 403 Problems and Practice in Nursery Observation	3	Household Economics 313 General Home Management	3
Education 343 Human Development and Learning	3	Education 313 The American Public School	3
	16	Home Economics 363 Special Methods	3
			18

SENIOR YEAR

First Semester	*Hrs.*	*Second Semester*	*Hrs.*
*Home Economics Education 406 Student Teaching	6	*Electives	12
*House 403 Home Management Residence	3		
*Child Development 413 Advanced Clothing Problems	3		
*Foods 413 Advanced Nutrition	3		
	18		12

MINOR IN HOME ECONOMICS

SOPHOMORE YEAR

	Semester Hrs.
Clothing 124	4
Art 113	3
Family Life Education 123	3
	10

JUNIOR YEAR

Foods 113 or 123	3
Child Guidance 413	3
Clothing 402	2
	8

MINOR IN RELATED ARTS

FRESHMAN YEAR

	Semester Hrs.
Art 113	3
Art 123 (Design)	3
Art 132	2
	8

SOPHOMORE YEAR

Art Education 373	3
Art 213	3
	6

SENIOR YEAR

Art 322	2
	2

SUGGESTED CURRICULUM FOR CLOTHING AND TEXTILES

FRESHMAN YEAR

Chemistry 114 Inorganic	4	Chemistry 124 Inorganic and Qualitative	4
Art 113 Elementary Design	3	English 123 Reading and Composition	3
English 113 Grammar and Composition	3	Physical Education 121 Freshman Practice	1
Mathematics 173 Applied Mathematics	3	Home Economics 123 Family Life Education	3
Physical Education 111 Freshman Practice	1	Foods 123 Elementary Nutrition	3
Clothing 103 Elementary Textiles	3	Clothing 124 Clothing for the Family	4
	17		18

*Either Semester

SOPHOMORE YEAR

Political Science 113 National Government	3
Physical Education 211 Sophomore Practice	1
Foods 223 Family Nutrition	3
History 173 United States 1492 to 1876	3
English 213 Public Speaking	3
Mathematics 183 Applied Mathematics	3
French 113 Elementary French	3
	19

Political Science 123 State Government	3
English 223 Introduction to Literature	3
Physical Education 211 Sophomore Practice	1
Chemistry 244 Elementary Physiological	4
History 183 United States 1877 to Present	3
French 123 Elementary French	3
	17

JUNIOR YEAR

Biology 304 Physiology	4
Household Economics 313 General Home Management	3
Home Economics Education 313 Developing a Functioning Program in Home Economics	3
Art 322 Costume Design	2
Clothing 313 Tailoring for Women	3
Education 343 Human Development and Learning	3
	18

Sociology 303 The Family	3
Foods 323 Meal Planning, Preparation, and Service	3
Household Economics 393 House Planning, Furnishing, and Equipment	3
Home Economics Education 363 Special Methods	3
Art Education 353 Drawing and Composition	3
Child Development 403 Problems and Practices in Nursery Observations	3
	18

SENIOR YEAR

*Home Economics Education 406 Student Teaching	6
*House 403 Home Management Residence	3
*Clothing 413 Clothing Problem	3
Child Development 413 Child Guidance	3
Clothing 423 Advanced Textiles	3
	18

*Clothing 402 Clothing Clinic	2
Tailoring 123 Elementary Tailoring	3
Clothing 443 Consumer Economics	3
Leatherwork 203 Leathercraft	3
Electives	6
	17

MINOR IN CLOTHING

	Semester Hrs.
Art 113	3
Clothing 124	4
Clothing 313	3
Clothing 402	2
Clothing 443	3
	15

*Either Semester

SUGGESTED CURRICULUM FOR DRESSMAKING AND DESIGN

Two-Year Course

FRESHMAN YEAR

First Semester	*Hrs.*	*Second Semester*	*Hrs.*
English 113 Grammar and Composition	3	English 123 Reading and Composition	3
Mathematics 173 Applied Mathematics	3	Mathematics 183 Applied Mathematics	3
Art 113 Elementary Design	3	Physical Education 121 Freshman Practice	1
Physical Education 111 Freshman Practice	1	Home Economics 123 Family Life Education	3
Clothing 124 Clothing for the Family	4	Clothing 103 Elementary Textiles	3
Leatherwork 203 Leathercraft	3	Foods 123 Elementary Nutrition	3
	17		16

SOPHOMORE YEAR

English 213 Public Speaking	3	Clothing 413 Clothing Problems	3
Art 353 Drawing and Composition	3	English 223 Introduction to Literature	3
Physical Education 211 Sophomore Practice	1	Tailoring 113 Elementary Tailoring	3
Art 322 Costume Design	2	Clothing 402 Clinic	2
Natural Science 113 College Science	3	Clothing 423 Advanced Textiles	3
Clothing 313 Tailoring for Women	3	Clothing 443 Consumer Economics	3
	16		16

NOTE—Students interested in Dressmaking, a two-year course, will see the Dean or Advisor for guidance.

SUGGESTED CURRICULUM FOR FOODS AND NUTRITION

FRESHMAN YEAR

Chemistry 114 Inorganic Chemistry	4	Chemistry 124 Inorganic Chemistry	4
Art 113 Elementary Design	3	English 123 Reading and Composition	3
English 113 Grammar and Composition	3	Physical Education 121 Freshman Practice	1
Clothing 103 Elementary Textiles	3	Home Economics 123 Family Life Education	3
Physical Education 111 Freshman Practice	1	Mathematics 173 Applied Mathematics	3
Foods 113 Elementary Nutrition	3	Clothing 124 Clothing for the Family	4
	17		19

SOPHOMORE YEAR

Political Science 113 National Government	3	Political Science 123 State Government	3
English 213 Public Speaking	3	English 223 Introduction to Literature	3
Physical Education 211 Sophomore Practice	1	Physical Education 221 Sophomore Practice	1
Physics 214 General Physics	4	Chemistry 244 Physiological	4
Foods 203 Advanced Food Selection and Preparation	3	History 183 United States 1877 to Present	3
History 173 United States 1492 to 1876	3	Mathematics 183 Applied Mathematics	3
	17		17

JUNIOR YEAR

First Semester	*Hrs.*
Biology 304 Physiology	4
Household Economics 313 General Home Management	3
Economics 213 Principles	3
Education 343 Human Development and Learning	3
Home Economics Education 313 Developing a Functioning Program in Home Economics	3
	16

Second Semester	*Hrs.*
Sociology 303 The Family	3
Biology 334 Bacteriology	4
Foods 323 Meal Planning, Preparation and Service	3
Education 313 American Public School and Curriculum	3
Home Economics Education 363 Special Methods	3
	16

SENIOR YEAR

*Foods 303 Techniques of Demonstration	3
*House 403 Home Management Residence	3
Child Development 413 Child Guidance	3
Foods 403 Experimental Cookery	3
Cooking and Baking 215 Quantity Cookery III	5
	17

*Foods 423 Advanced Nutrition	3
*Household Economics 393 House Planning, Furnishing and Equipment	3
*Foods 422 Seminar in Foods and Nutrition	2
*Home Economics Education 406 Student Teaching	6
Electives	6
	17

SUGGESTED CURRICULUM FOR MINOR IN FOODS AND NUTRITION

	Semester Hrs.
Foods 113 Elementary Nutrition	3
Foods 223 Family Nutrition	3
Foods 323 Meal Planning, Preparation and Service	3
Foods 413 Special Food Problems	3
Foods 422 Seminar in Foods and Nutrition	2
Electives	7
Total Semester hours	21

DIETETIC AND INSTITUTIONAL ADMINISTRATION CAREERS

Individual choosing the curriculum for dietetics and institution administration may qualify for positions as hospital dietetians, dietetians in research laboratories, industrial concerns, schools, colleges and universities, restaurants, tea rooms, motels, hotels, and other commercial eating shops, test kitchens, commercial air lines and Government agencies. Individuals may become chefs and food supervisors as well as work with public health and social welfare agencies, newspapers and magazines, television and radio.

ACADEMIC REQUIREMENTS FOR AMERICAN DIETETIC ASSOCIATION MEMBERSHIP

Students who wish to qualify for Dietetic Internship must take the following required courses and semester hours.

*Either Semester

Core Subjects

Basic Minimum — 22 semester hours

Natural Sciences ..... 14 semester hours

Human physiology and bacteriology ..... 6 semester hours

Chemistry ..... 8 semester hours

Food ..... 6 semester hours

Selection, preparation, meal planning and service

Nutrition ..... 2 semester hours

Emphasis I — Basic Minimum ..... 9 semester hours

Food Service Management

**Organization and management*

**Quality food production and service*

Principles of accounting

Concentration A — Basic Minimum ..... 15 semester hours

Therapeutic and Administrative Dietetics

**Nutrition (biochemistry, prerequisite or concurrent)*

**Personal management or industrial psychology*

**Principles of learning or educational psychology*

**Diet therapy*

Experimental foods

NOTE—Italicized subject areas are required*

SUGGESTED CURRICULUM IN DIETETICS AND INSTITUTIONAL ADMINISTRATION

FRESHMAN YEAR

First Semester	*Hrs.*	*Second Semester*	*Hrs.*
Chemistry 114 Inorganic Chemistry	4	Chemistry 124 Inorganic Chemistry	4
Art 113 Elementary Design	3	English 123 Reading and Composition	3
English 113 Grammar and Composition	3	Home Economics 123 Family Life Education	3
Mathematics 173 Applied Mathematics	3	Clothing 103 Elementary Textiles	3
Physical Education 111 Freshman Practice	1	Physical Education 121 Freshman Practice	1
Foods 113 Elementary Nutrition	3	Clothing 124 Clothing for the Family	4
	17		18

SOPHOMORE YEAR

Economics 203 Survey of Economics	3	Political Science 123 State Government	3
Political Science 113 American National Government	3	English 223 Introduction to Literature	3
Physical Education 211 Sophomore Practice	1	Physical Education 221 Sophomore Practice	1
English 213 Public Speaking	3	Mathematics 183 Applied Mathematics	3
History 173 United States 1492 to 1876	3	History 183 United States 1877 to Present	3
Commercial Foods 233 Organization and Management	3	Foods 223 Family Nutrition	3
Household Economics 313 General Home Management	3		16
	19		

See Dean or Department Head for selection of elective.

JUNIOR YEAR

First Semester	*Hrs.*
Clothing 313 Tailoring for Women	3
Biology 334 Bacteriology	4
Commercial Foods 215 Quantity Cookery I	5
Education 343 Human Development and Learning	3
Home Economics Education 313 Developing a Functioning Program in Home Economics	3
	18

Second Semester	*Hrs.*
Home Economics Education 363 Special Methods	3
Biology 304 Physiology for Home Economics Students	4
Education 313 The American Public School	3
Household Economics 393 Planning, Furnishing and Equipment	3
Child Development 403 Problems and Practices in Nursery Observations	3
Foods 323 Meal Planning	3
	19

SENIOR YEAR

Foods 423 Advanced Nutrition	3
Foods 443 Diet in Health and Disease	3
Child Development 413 Child Guidance	3
Chemistry 434 Biochemistry	4
Business Administration 253 Accounting	3
	16

Home Economics Education 406 Student Teaching	6
House 403 Residence	3
Electives	6
	15

SUGGESTED CURRICULUM IN HOUSEHOLD ECONOMICS AND CHILD DEVELOPMENT

FRESHMAN YEAR

Chemistry 114 Inorganic Chemistry	4
English 113 Grammar and Composition	3
Mathematics 173 Applied Mathematics	3
Physical Education 111 Freshman Practice	1
Household Economics 123 Introduction to Family Economics	3
Art 113 Elementary Design	3
	17

Chemistry 124 Inorganic Chemistry	4
English 123 Reading and Composition	3
Physical Education 121 Freshman Practice	1
Home Economics 123 Family Life Education	3
Foods 113 Elementary Nutrition	3
Clothing 103 Elementary Textiles	3
	17

SOPHOMORE YEAR

Mathematics 183 Applied Mathematics	3
Political Science 113 National Government	3
English 213 Public Speaking	3
Physical Education 211 Sophomore Practice	1
Clothing 124 Clothing for the Family	4
History 183 United States 1877 to Present	3
	17

Political Science 123 State Government	3
English 223 Introduction to Literature	3
Physical Education 221 Sophomore Practice	1
History 173 United States 1492 to 1876	3
Foods 223 Family Nutrition	3
Household Economics 283 Personal and Family Finance	3
	16

JUNIOR YEAR

Biology 304 Physiology	4
Education 313 The American Public School	3
Household Economics 313 General Home Management	3
Education 343 Human Development and Learning	3
Home Economics Education 313 Developing a Functioning Program in Home Economics	3
	16

Sociology 303 The Family	3
Household Economics 393 Planning, Furnishing and Equipment	3
Child Development 403 Problems and Practices in Nursery School Observation	3
Home Economics Education 363 Special Methods	3
Foods 323 Meal Planning, Preparation and Service	3
Child Development 413 Child Guidance	3
	18

SENIOR YEAR

Household Economics 423 Housing	3
*Home Economics Education 406 Student Teaching	6
*Child Development 453 Problems of Child Development	3
Clothing 313 Tailoring for Women	3
Electives	2
	17

House 403 Home Management Residence	3
Child Development 323 Parent Education	3
Electives	10
	16

SUGGESTED CURRICULUM FOR MINOR IN HOUSEHOLD ECONOMICS AND CHILD DEVELOPMENT

	Semester Hrs.
Household Economics 123 Introduction to Family Economics	3
Child Development 403 Problems and Practices in Nursery School Observations	3
Child Development 413 Child Guidance	3
Household Economics 313 General Home Management	3
Household Economics 283 Personal and Family Finance	3
Child Development 453 Problems of Child Development	3

EARLY CHILDHOOD EDUCATION

Specialization in this department prepares students for nursery school and elementary school teachers, supervisors, and directors.

The purpose of this department is to give students an understanding and appreciation for children. The nursery school children, ages two to five; kindergarten and elementary school children, offer unique opportunities to observe child life at the various age levels.

It is recommended that the student have a general background in home economics, but students with training in psychology, sociology, elementary education, and nursing may be accepted.

Students are advised to select courses with assistance of their advisers or the Dean.

*Either Semester

DESCRIPTION OF COURSES

ART

113. Elementary Design. (Art 113 Elem Design) (1-4) Credit 3. I. Basic Design principles applied to everyday living. Space, pattern, texture, line and color as related to clothing, home furnishings and arrangement and table decoration. Art appreciation. Open to Non-Majors. Lab Fee: $2.00.

123. Design. (Art 123 Design) (1-4) Credit 3. II. Basic Design Principles applied to composition. Media: Tempera, pen and ink pastels. Lab Fee: $2.00.

132. Crafts. (Art 132 Crafts) (0-4) Credit 2. II. Creative design through a variety of crafts; clay modeling and plaster casting, leathercraft; textile design (stenciling, block printing, silk screen printing) and metal craft.

213. Figure Drawing. (Art 213 Figures) (0-6) Credit 3. I. Fundamentals of structure and anatomy; a study of the human figure to establish a sense of figure proportion and relationships. Lab Fee: $2.00.

322. Costume Design. (Art 322 Costumes) (0-4) Credit 2. I. Adaptation and creation of fashions; selection of appropriate costumes and accessories for occasions; fashion illustration; media: pencil, charcoal, pen, ink, and water color. Offered alternate years. Lab Fee: $2.00.

CHILD DEVELOPMENT

302. Children's Literature. (ChDv 302 Literature) (2-0) Credit 2. II. Literature as a resource in the child's living; relation of children's literature to world literature; traditional and modern forms; illustration in children's books.

322. Nursery Education Music and Creative Arts. (ChDv 322 Nursery Arts) (1-2) Credit 2. II. Selection of books, stories, music and art for children two to five years old. Lab Fee: $2.00.

323. Parent Education. (ChDv 323 Parent Educ) (3-0) Credit 3. II. Parent needs in relation to children; investigation of methods, materials, and literature used in work with parents.

333. Physical Development of Children. (ChDv 333 Dvlp) (3-0) Credit 3. I. Nutritional requirements and growth patterns of children; factors influencing this growth.

401. Nursery School Observation. (ChDv 401 Observation) (0-1) Credit 1. I or II. Observation of pre-school children; participation in nursery school activities; meetings with parents.

403. Problems and Practice in Nursery and Kindergarten Observation. (ChDv 403 Practice). I or II. Evaluation of changing practice in school procedures; teacher-child relationship; individual needs and group structure; implications of current therapeutic techniques for teaching.

413. Child Guidance. (ChDv 413 Guidance) (3-0) Credit 3. The development characteristics of young children; needs and principles involved in the guidance of children at the pre-school age. Open to Non-Majors.

414. Problems in Observation and Participation in Nursery School. (ChDv 414 Problems) (1-4) Credit 4. I or II. Work as assistant in Nursery School; experience to be earned in a selected nursery school away from campus. (9 weeks.) Elective.

453. Problems of Child Development. (ChDv 453 Child Dvlp) (3-0) Credit 3. I. Opportunities to discuss problems of the classroom, the community and related fields.

CLOTHING AND TEXTILES

103. Elementary Textiles. (Clo 103 Elementary) (1-4) Credit 3. I. A study of basic and special weaves and finishes in fabrics. Experience in the use of the weaving machine. The creating of designs for printed and woven textiles as well as the application of design of cloth. Lab Fee: $2.00. Open to Non-Majors.

124. Clothing for the Family. (Clo 124 Family) (2-4) Credit 4. II. Construction, cost, care and maintenance of clothing for the family. Lab Fee: $2.00. Open to Non-Majors.

312. Fabrics in Home Furnishings. (Clo 312 Fabrics) (1-2) Credit 2. A study and use of color, design, textures, and accessories in household fabrics. Upholstering, making of slip covers, draperies and bed spreads. One field trip. Offered alternate years. Lab Fee: $2.00.

313. Tailoring for Women. (Clo 313 Tailoring) (1-4) Credit 3. I. Experience in handling various types of woolens and the problems involved in the construction of a suit, coat and slacks. Prerequisites: Clothing 124, 223. Estimate for materials and supplies: $40.00.

402. Clothing Clinic. (Clo 402 Clinic) (0-4) Credit 2. I or II. Experience in clothing construction; fitting and design for customers.

403. Clothing (Draping) (0-6) Credit 3. Principles of design; draping of fabric on dress form; interpretation of design in relation to different fabrics and figures. Prerequisites: Nine hours in Clothing.

413. Advanced Clothing Problems. (Clo 413 Adv Problems) (1-4) Credit 3. Pattern study, selection and fitting for individuality in dress using silk fabric. Estimate for supplies $20.00.

423. Advanced Textiles. (Clo 423 Adv Textiles) (1-4) Credit 3. Nature of the raw materials; economic, chemical and physical applications involved in their manufacture and use; methods and significance of physical testing. Prerequisites: Chemistry 114, 124, 224, 214; Biology 304; Physics 214. Offered alternate years. Lab Fee: $2.00.

443. Consumer Economics. (Clo 443 Consumr Econ) (3-0) Credit 3. Living and cultural background and clothing consumer programs.

FOODS AND NUTRITION

113-123. Elementary Nutrition. (Fds 113-123 Elem Nutritn) (3-0) Credit 3. Developing food selection habits which meet nutritional standards; developing and scientific knowledge of foods. Open to Non-Majors.

143. Foods and Nutrition. (Fds 143 Nutrition) (2-2) Credit 3. Fundamental knowledge of nutrition and its relation to the total health picture of the individual, the family, and the community health. Includes planning simple menus, preparation of diets to meet the needs of individuals at different age levels, in varying kinds of occupations, and at varying economic levels. Lectures, recitation and laboratory, four hours weekly.

203. Advanced Food Selection and Preparation. (Fds 203 Adv Selectn) (1-4) Credit 3. Fundamentals of selecting, serving and preparaing food in large quantities; rudiments of cafeteria and institutional management; menu planning, preparation and serving large groups. Fee: $2.00.

212-222. Foods. (Fds 212-222 Adv Planning) (0-4) Credit 2. Advanced planning, preparation and service for groups of various sizes and ages.

223. Family Nutrition and Child Feeding. (Fds 223 Fmly Nutritn) (1-4) Credit 3. I or II. Preservation and discussion of current ideas on feeding children and their families; relation of nutrition to physical growth and development. Prerequisite: Elementary Nutrition. Fee: $2.00.

303. Techniques and Principles of Demonstration. (Fds 303 Demonstratn) (1-4) Credit 3. I or II. Purpose and technique of demonstration and food preparation and nutrition. Each student expected to prepare and give several demonstrations. Fee: $2.00.

323. Meal Planning and Preparation. (Fds 323 Meal Plan) (1-4) Credit 3. II. Planning, marketing, preparing and serving palatable nutritious and attractive meals for families at various economic levels; use and care of equipment and table appointments. Laboratory Fee: $2.00.

403. Experimental Cookery. (Fds 403 Cookery) (1-4) Credit 3. I or II. Factors involved in meal planning; preparation and serving of food with special units on food experimentation and comparison of commercial and home products. Lab Fee: $2.00.

413. Individual Problems in Foods and Nutrition. (Fds 413 Problems) (1-4) Credit 3. II. Advanced course for students wishing to do work in a special phase of Foods and Nutrition before graduation. Laboratory Fee: $2.00.

422. Seminar in Food and Nutrition. (Fds 422 Seminar) (2-0) Credit 2. Recent trends and findings in foods and nutrition topics related to practical problems in human nutrition. Prerequisites: Psysiology, chemistry and nutrition.

423. Advanced Nutrition and Diet Therapy. (Fds 423 Adv Nutritn) (1-4) Credit 3. II. Principles of human nutrition; energy, mineral, vitamin, fat, and carbohydrate requirements of human body. Practical application of recent developments in the dietary treatment of disease in which nutrition plays a major role by planning diets for various diseases. Laboratory Fee: $2.00.

443. Diet in Health and Disease. (Fds 443 Diet) (3-0) Credit 3. Principles involved in diet for healthy individuals and abnormal individuals.
463. Organization and Management. (Fds 463 Organization) (3-0) Credit 3. Discussion and application of techniques in organization and managing Food Service institutions.

HOME ECONOMICS EDUCATION

363. Special Methods. (H Ed 363 Spec Methods) (3-0) Credit 3. I or II. Curriculum, methods of teaching, management, and other problems of the homemaking teacher.

406. Student Teaching and Problems. (H Ed 406 Student Tchg) (6-0) Credit 6. I or II. Supervised teaching of homemaking in schools for a period of 9 weeks.

313. Developing a Functioning Program in Home Economics. (H Ed 313 Program Dvlp) (3-0) Credit 3. General and vocational program features; planning, managing and financing departments; services rendered in-school, out-of-school youth and adults; other problems pertinent to development of effective secondary homemaking programs.

HOUSEHOLD ECONOMICS

123. Introduction to Family Economics. (Hse 123 Family Econ) (3-0) Credit 3. II. Major social and economic problems faced by home managers in bringing about good family relationships. Open to Non-Majors.

283. Personal and Family Finance. (Hse 283 Finance) (3-0) Credit 3. Specific financial problems confronting individuals and family groups; a study of the legal aspects of a successfully run home.

313. General Home Management (Hse 313 Home Mgt) (3-0) Credit 3. The management procedure applied to problems of values, standards, goals, and decision making as integral features in the promotion of individuals and family well-being and satisfaction.

393. House Planning, Furnishing and Equipment. (Hse 393 House Plan) (3-0) Credit 3. Consideration of dwellings, their environment, plans and space requirements; selection, use, and care of certain furniture and equipment used in the home, which promote effective utilization of family resources.

403. Supervised Home Management. (Hse 403 Residence) (1-4) Credit 3. I or II. Home residence provides for the application of principles related to satisfactory home life; opportunity is provided for experience in group living and for management of the human and material resources of a home. Lab Fee: $2.00.

423. Housing. (Hse 423 Housing) (3-0) Credit 3. II. Housing standards and conditions; home ownership, financing, house design from consumer's point of view; government housing. Prerequisite: Household Economics 393.

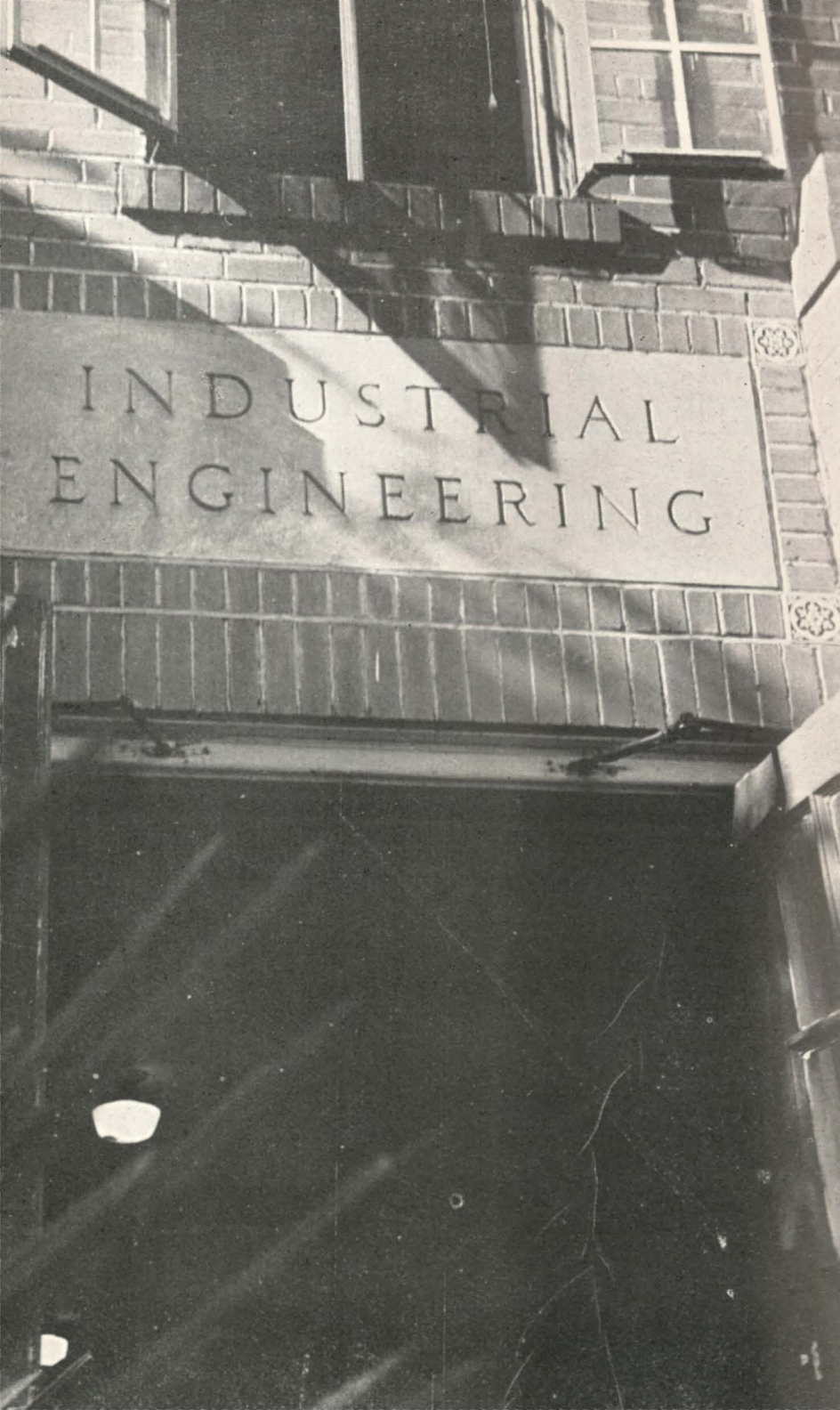
GENERAL HOME ECONOMICS

123. Family Life. (H E 123 Family Life) (3-0) Credit 3. I or II. Family life problems and experiences in solving them. Open to Non-Majors.

H. E. 400. Investigative Paper. (H E 400 Inves Paper.) Seniors in all curricula are required to present a paper on some phase of work in the major field.

Note.—Students in all curricula will consult advisers relative to courses for certification.

Note.—Unless otherwise provided, the student will consult adviser about satisfying American History requirement.


INDUSTRIAL
ENGINEERING

School of Industrial Education and Technology

GENERAL INFORMATION

The School of Industrial Education and Technology offers educational programs designed to help prepare young men and women to meet the demands of industry, society and life. The School of Industrial Education and Technology is organized for instruction into departments as follows: (1) The Industrial Teacher Education Department, for preparing industrial art and vocational-industrial education teachers; (2) The Industrial Technology Department for preparing technicians for industry; and, (3) The Technical Education Department for preparing skilled workers for industrial and manufacturing occupations. The School offers undergraduate courses leading to the Bachelor of Science Degree, Associate of Science Degree and Certificates of Proficiency in the following curricula:

Teacher Education Curricula:

1. B. S. Degree: Major in Industrial Education
2. B. S. Degree: Major in Vocational-Industrial Education
3. Special Certification Courses for T & I Teachers

Industrial Technology Curricula:

1. B. S. Degree: Major Industrial Technology (4 years non-teaching)
2. A. S. Degree: Air Conditioning and Refrigeration Technology
3. Certificates of Proficiency in:
   - Automotive Technology
   - Building Construction Technology
   - Drafting Technology
   - Electrical Technology
   - Electronic Technology
   - Metal Technology

Technical Education Curricula:

1. B. S. Degree: Major in Industrial Education (Non-Teaching)
2. Certificate of Proficiency in:
   - Brickmasonry
   - Carpentry
   - Commercial Foods
   - Dry Cleaning
   - Electricity
   - Plumbing
   - Printing
   - Shoe Repair & Leatherwork
   - Tailoring

The School of Industrial Education and Technology also offers advanced work leading to the degrees of Master of Science, and Master of Education in Industrial Education. Additional information on the graduate programs is available in the graduate section of the college catalog.

The School of Industrial Education and Technology has a physical plant occupying over 50,000 square feet of floor space and valued above one quarter million dollars. The offices, classrooms and laboratories are housed in the following buildings:

THE INDUSTRIAL ENGINEERING BUILDING . . . has classrooms and and shop laboratories in various trades as well as office space for the Dean of the School of Industrial Education and Technology and the School's staff. . .

1. **Industrial Education Building**—In this building are located the administrative offices; classrooms; library and reading rooms; drafting rooms and laboratories for instruction in masonry, crafts, printing, woodwork, painting and decorating, plumbing, sheet metal and auto mechanics.
2. **N.Y.A. Shop**—In this building are located laboratories for instruction in bench and machine metalwork, welding and foundry. This building is fully equipped with hand tools, machine tools, testing and processing equipment in order to maintain a first-rate instruction program for the metalworking industry.
3. **Industrial Education Annex**—In this building are located classrooms for related instruction and laboratories for instruction in electronics, electricity and building construction. This building is equipped with the latest equipment in order to provide the students with the best possible instruction.

Due to changes in industry, education and our advancing technology, the School may make, from time to time, appropriate changes in its curricula in order to maintain always an up-to-date and adequate educational program. Students shall follow the prescribed outline of courses which were required at the time they entered in a particular curriculum. All substitutions of courses must be approved in writing by the Dean of the School prior to the time they are made.

ADMISSION

All applicants for admission to the School of Industrial Education and Technology must satisfy the same entrance requirements as are required for entrance to the general college. In addition, applicants to each department in the School shall be required to meet the specific admission requirements of the curriculum in which they wish to earn a degree or certificate. Students transferring from another college to the School of Industrial Education and Technology shall meet the general college requirements for transfer students. Students shall be given credit for courses transferred whenever the Dean of the School deems the courses to be equivalent or similar to prescribed courses in the School of Industrial Education and Technology.

GRADUATION REQUIREMENTS*

General

All students must apply for graduation from the School of Industrial Education and Technology. Applications for graduation should be made at the Registrar's Office within the first three days of the semester or summer term in which the student plans to graduate.

Academic

The requirements for graduation from the School of Industrial Education and Technology are the satisfactory completion of all courses in one of the prescribed curricula, with at least a "C" average. All industrial education students enrolled in curricula leading to the Bachelor of Science degree are required to have a "B" average with no grade below "C" in their respective majors as a requirement for graduation.

Senior Essay or Project

A technical essay, research paper or project development will be required of each student pursuing the Bachelor of Science degree. The purpose of this requirement is to give the student an opportunity to demonstrate an ability to identify and define a problem, to propose a solution and gather data supporting the same, to interpret and give meaning to data and write a technical report. Students may develop a technical project in lieu of a

*See detailed explanation of requirements for graduation from the College in Academic Information section of this bulletin.

written report. The project must support some specific technical principle or idea. The senior essay or project may be devoted to a specific technical field or to the general field of industrial education.

Technical Information and Skill Requirement

Appropriate examinations covering technical information and skill development may be required of industrial education majors before they are approved for graduation.

TEACHER EDUCATION CURRICULA

Industrial Arts Teacher Education

The Industrial Arts Curricula are designed to offer experiences for the following purposes: (1) To prepare young men and women as teachers of Industrial Arts Education at the elementary, junior or senior high school levels, (2) To assist persons to become supervisors, coordinators and directors of Industrial Arts programs, and (3) To assist students who might wish to develop a hobby, develop elementary skill in using tools and industrial materials or increase their general understanding, knowledge and appreciation of the industrial world in which they live.

Upon the completion of the prescribed undergraduate curriculum, the student will receive the Bachelor of Science degree. He will be entitled to make application and receive a certificate valid to teach Industrial Arts in any public school in the State.

DEGREE REQUIREMENTS

Bachelor of Science Degree

To earn the Bachelor of Science degree with a major in industrial arts, the student must complete 140 semester hours of academic and technical coursework, including 8 semester hours Military Science (men) and 4 semester hours Physical Education. The academic and technical work shall be distributed as follows:

ACADEMIC FOUNDATIONS — 57 Semester Hours

Courses	Hours	Courses	Hours
Mathematics	6	History	6
College Algebra	3 hours	American History	
Trignonometry	3 hours	English	12
Science	16	Composition and Grammar	3 hours
Chemistry	8 hours	Reading and Composition	3 hours
Physics	8 hours	Public Speaking	3 hours
Government	6	Introduction to Literature	3 hours
State Government	3 hours	Social Science	3
National Government	3 hours		
Physical Education	4		
Military Science	8		

INDUSTRIAL ARTS CORE COURSES — 8 semester hrs.

Industrial Education 111 and 121 Philosophy of Industrial Education	2 semester hrs.
Industrial Education 273 Classroom Organization and Management	3 semester hrs.
Industrial Education 323 Coursemaking	3 semester hrs.

PROFESSIONAL EDUCATION COURSES — 18 semester hrs.

Education 313 American Public School	3 semester hrs.
Education 343 Human Development and Learning	3 semester hrs.
Industrial Education 413 Methods of Teaching	3 semester hrs.
Education 483 Basic Concepts in Education	3 semester hrs.
Industrial Education 406 Student Teaching	6 semester hrs.

INDUSTRIAL ARTS SPECIALIZATION — 30 or 54 Semester Hours

To be selected according to Plan I or II

ELECTIVES (FREE) 3 Semester Hours

The Industrial Arts Major

The requirements for a major in Industrial Arts consists of not less than 30 semester hours: Majors shall select a program under either Plan I (Industrial Arts major with non-industrial arts minor), or Plan II (Industrial Arts major without a minor). Plan I and Plan II are described below:

Plan I

Industrial Arts Major with a Non-Industrial Arts Minor

Major: Industrial Arts	
Drawing 113, 123	6 Semester Hours
Technical Courses	24 Semester Hours
Total	30 Semester Hours
Minor: Must be selected from an instructional area outside the School of Industrial Education and Technology	24 Semester Hours
Total Semester Hours Required (Plan I)	54 Semester Hours

Explanation of Plan I

Major: The requirements for a major in industrial Arts Teacher Education under Plan I shall consist of not less than 30 semester Hours. Six semester hours shall be in drawing and design; and either (a) twelve semester hours shall be in two technical areas selected from the list below, or (b) 24 semester hours shall be in one technical area selected from the list below:
Crafts
Electricity and Electronics
Graphic Arts
Metalwork
Transportation (Auto Mechanics)
Woodwork

Minor: The minor under Plan I shall consist of not less than 24 semester hours. All minors must be selected from instructional areas outside the School of Industrial Education and Technology. Minors must be approved in writing by the Dean of the School before the student enrolls for any course in the minor field.

Plan II

Industrial Arts Major Without a Minor

Students who elect to complete a major in industrial arts under Plan II must follow either Option A (Unit Shop teacher preparation) or Option B (General Shop Teacher preparation).

Option A (Plan II)	
Drawing 113, 123, 203, and 263 or 313	12 Semester Hours
Technical Courses in one Technical Area	30 Semester Hours
Technical Electives	12 Semester Hours
	54 Semester Hours
Option B (Plan II)	
Drawing 113, 123, 203, and 263 or 313	12 Semester Hours
Twelve semester hours in each of three separate technical areas	36 Semester Hours
Technical Electives	6 Semester Hours
	54 Semester Hours

Explanation of Plan II

Option A (Plan II)

The purpose of Option A (Plan II) is to prepare the student who will teach in a unit shop industrial arts laboratory (one technical area in one laboratory). The requirements for a major in Industrial Arts under Plan II Option A shall consist of not less than 54 semester hours. Twelve semester hours shall be in drawing and design; 30 semester hours shall be in one of the technical areas listed below and 12 semester hours shall be in electives chosen from the areas listed below:

Crafts*
Driver Education*
Drafting**
Electricity
Electronics
Graphic Arts
Metalwork
Transportation
Woodwork

Option B (Plan II)

The purpose of Option B (Plan II) is to prepare the student who will teach in a general shop industrial arts laboratory (several technical areas in one laboratory). The requirements for a major in Industrial Arts under Plan II Option B shall consist of not less than 54 semester hours. Twelve semester hours shall be in drawing and design; twelve semester hours shall be in woodwork and/or metalwork; twelve semester hours each to complete the major shall be in one or more of the following areas: electricity, electronics, graphic arts, crafts, transportation, woodwork, or metalwork; six semester hours of technical electives to complete Option B shall be selected from any of the technical areas listed above.

Suggested Program for a Minor in Industrial Arts

Students who are not enrolled in the School of Industrial Education and wish to select a second teaching field may minor in Industrial Arts Education. The following program is recommended:

Drawing 113 and 123	6 Semester Hours
Industrial Education 273 Classroom Organization and Management	3 Semester Hours
Industrial Education 323 Coursemaking	3 Semester Hours
Technical Courses (A minimum of six hours each shall be selected from two of the following areas: woodwork, metalwork, electricity, electronics, transportation, or crafts.)	12 Semester Hours
Total	24 Semester Hours

VOCATIONAL INDUSTRIAL TEACHER EDUCATION

The vocational-industrial program is organized for the following purposes: (1) to prepare teachers of trade and industrial education for the secondary schools; (2) to offer courses to in-service trade and industrial teachers to enable them to meet the certificate requirements under the Texas State Plan for Vocational Education and (3) to provide teacher trainer services in trade and industrial education on a contractural basis for the Texas Education Agency.

A student may qualify for the Bachelor of Science degree with a major in vocational-industrial education by showing satisfactory proof of having three years of experience as a journeyman in a recognized trade or technical field and completing the following courses:

*May be used in the eleven hour elective group only.
**With permission a student may elect 30 semester hours in drafting.

Mathematics	6 semester hours
Chemistry	9 semester hours
Physics	8 semester hours
History	6 semester hours
Government	6 semester hours
English	12 semester hours
Social Science	3 semester hours
Professional Education	18 semester hours
Industrial Education	12 semester hours
Elective (Minor)	24 semester hours

INDUSTRIAL TECHNOLOGY CURRICULA

The Industrial Technology Curricula are organized to provide training for students to become technicians in industry and manufacturing occupations. Technicians are employed in positions of technical and semi-professional nature which are found in the area between the skilled crafts and highly scientific professions.

Nature of the Work of a Technician

The technician is a person who works at a job which requires applied knowledge and applied technical skill. His job usually requires some manipulative skills—those necessary to handle properly the tools and instruments needed to perform the technical task. The technician is not an engineer nor is he a mechanic. He is a specialist who translates the ideas of the scientist into the actual products of industry. He is a foreman, an inspector, a contractors, a proprietor, a technical aide. He constructs, installs, operates, maintains, and tests those units of industry which require technical skill and a knowledge of basic science beyond that possessed by a mechanic or a machine operator but not as extensive as that which is possesssed by the engineer.

Programs of Study

Students may enroll in one of the following Industrial Technological curricula: (1) Four-year program leading to the Bachelor of Science Degree with a major in Industrial Technology; and, (2) Two-year program leading to an Associate of Science Degree or Certificate of Proficiency. Students interested in becoming industrial technicians may study in the following areas:

Air Conditioning and Refrigeration Technology

Automotive Technology
Building Construction Technology*
Drafting Technology
Electrical Technology
Electronic Technology
Metal Technology

DEGREE REQUIREMENTS

Bachelor of Science Degree

To earn the Bachelor of Science Degree with a major in Industrial Technology, the student must complete 144 semester hours of academic and technical coursework, inculding 8 semester hours Military Science (men) and 4 semester hours Physical Education. The academic and technical work shall be distributed as follows:

GENERAL EDUCATION — 57 semester hours

Course	*Hours*
Mathematics	6
College Algebra	3 hours
Trigonometry	3 hours
Science	16
Chemistry	8 hours
Physics	8 hours
Government	6
State Government	3 hours
National Government	3 hours
Physical Education	4
Military Science	8
History	6
American History	
English	12
Composition and Grammar	3 hours
Reading and Composition	3 hours
Public Speaking	3 hours
Introduction to Literature	3 hours
Social Science	3

*Building Construction Technology requires three years for completion.

INDUSTRIAL TECHNOLOGY COURSES	56 Semester Hours
INDUSTRIAL AND BUSINESS MANAGEMENT	24 Semester Hours
ELECTIVES	7 Semester Hours
IE 111-121 Philosophy of Industrial Education	2 semester hours
Free Electives	5 semester hours

ASSOCIATE DEGREE AND CERTIFICATE REQUIREMENTS

Two-Year Technician Program

To earn the Associate Degree or Certificate of Proficiency the student must enroll in one of the courses approved for technician training and complete all of the courses listed in the suggested curriculum outline. Curriculum outlines for each industrial technology curriculum are described on previous pages. The normal length of the technician training program is two years, except Building Construction which is three years. Upon completion of the certificate program, a student may transfer into one of the four-year programs and earn the Bachelor of Science Degree by fulfilling all requirements of the degree program.

TECHNICAL EDUCATION CURRICULA

The Technical Education Curricula are organized to offer instructional programs for the following purposes: (1) To prepare students to enter various skilled trades and manufacturing industries as foremen, workers, supervisors, technicians or sales personnel: (2) To allow students who cannot afford time or expense of taking a four-year course to take a two-year course and apply their limited time directly to acquiring skill in some industry in order to enable them to enter the labor force as quickly as possible, (3) To provide trade extension or refresher courses to those who wish to extend their knowledge, skill, and efficiency for the purpose of personal improvement, professional advancement, and job promotions, and (4) To provide special technical courses for individuals who have special needs, i.e., industrial rehabilitation students or students who wish to learn only part of a trade such as linotype operating, lettering, motor winding, etc.

Programs of Study

Students may enroll in one of the following curricula in Technical Education: (1) Four-Year program leading to the Bachelor of Science Degree, (2) Two-Year program leading to a Certificate of Proficiency, and (3) One-Year program leading to a Certificate of Apprenticeship.* Students may concentrate their interests in the following areas:

Air Conditioning and Refrigeration Technology

Auto Mechanics
Brickmasonry
Cabinet Making
Carpentry
Commercial Foods
Drafting and Design
Dry Cleaning
Electricity
Electronics
Food Service Administration
Machine Shop, Foundry, Welding
Plumbing
Printing
Tailoring

DEGREE REQUIREMENTS

Bachelor of Science

To earn the Bachelor of Science degree, the student must complete 144 semester hours of academic and technical coursework, including 4 semester hours Military Science (men) or 4 semester hours Physical Education. The academic and technical work shall be distributed as follows:

*Admission to the one-year program is limited to industrial rehabilitation students.

GENERAL EDUCATION

57 semester hours

Courses	Hours
Mathematics	6
College Algebra	3 hours
Trigonometry	3 hours
Science	16
Chemistry	8 hours
Physics	8 hours
Government	6
State Government	3 hours
National Government	3 hours
Physical Education	4
Military Science	8
History	6
American History	
English	12
Composition and Grammar	3 hours
Reading and Composition	3 hours
Public Speaking	3 hours
Introduction to Literature	3 hours
Social Science	3

TECHNICAL EDUCATION — 56 Semester Hours
- Drafting and Design 113, 123, 203, 303 — 12 semester hours
- Area of Specialization — 44 semester hours

INDUSTRIAL AND BUSINESS MANAGEMENT — 24 Semester Hours

ELECTIVES — 7 Semester Hours
- IE 111-121 Philosophy of Industrial Education — 2 semester hours
- Free Electives — 5 semester hours

CERTIFICATE REQUIREMENT

Two-Year Program

To earn the Certificate of Proficiency in Technical Education the student must enroll in one of the programs approved for technical-education majors and complete all of the courses listed in the suggested curriculum outline. Curriculum outlines for each technical area are described on previous pages. The normal length of a certificate program is two years. Upon completion of the two-year certificate program, a student may transfer into a four-year program and earn the Bachelor of Science degree by fulfilling all requirements of the degree program.

One-Year Program

Special one-year technical training programs are offered to meet the needs of students who are under contract with the Vocational Rehabilitation Division, Texas Education Agency. All rehabilitation students will enroll for a minimum of 14 semester hours during each semester of the regular session and six semester hours during each term of the summer session. Students may earn a Certificate of Apprenticeship in the following technical fields:

1. Air Conditioning and Refrigeration Technology
2. Automobile Mechanics
3. Cabinet Making
4. Carpentry
5. Commercial Foods
6. Drawing and Design
7. Dry Cleaning
8. Electricity
9. Electronics
10. Masonry
11. Metalwork, Foundry, and Welding
12. Plumbing
13. Printing
14. Tailoring

SUGGESTED CURRICULA OUTLINES
INDUSTRIAL ARTS TEACHER EDUCATION

Curriculum Outline for the Bachelor of Science Degree with a major in Industrial Arts (Plan I and Plan II).

FRESHMAN YEAR

First Semester	*Hrs.*	*Second Semester*	*Hrs.*
Mathematics 113 College Algebra	3	Mathematics 123 Trigonometry	3
English 113 Grammar and Composition	3	English 123 Reading and Composition	3
Drafting 113 General Drafting	3	Drafting 123 General Drafting	3
Industrial Laboratory	6	Industrial Laboratory	6
Industrial Education 111 Philosophy of Industrial Education	1	Industrial Education 121 Philosophy of Industrial Education	1
Military Science 112 Elementary	2	Military Science 122 Elementary	2
Physical Education 111 Freshman Practice	1	Physical Education 121 Freshman Practice	1
	18		18

Curriculum outline for the Bachelor of Science Degree with a major in Industrial Arts (Plan I).

SOPHOMORE YEAR

Political Science 113 National Government	3	Political Science 123 State Government	3
English 213 Public Speaking	3	English 223 Introduction to Literature	3
History 173 The United States 1492-1876	3	History 183 The United States 1492-1876	3
Chemistry 114 Inorganic Chemistry	4	Chemistry 124 Inorganic Chemistry	4
Industrial Laboratory	3	Industrial Laboratory	3
Military Science 212 Elementary	2	Military Science 222 Elementary	2
Physical Education 211 Sophomore Practice	1	Physical Education 221 Sophomore Practice	1
	18		18

JUNIOR YEAR

Physics 215 General Physics	5	Physics 225 General Physics	5
Industrial Education 273 Classroom Organization	3	Education 343 Human Development and Learning	3
Minor	3	Minor	3
Education 313 American Public School	3	Elective*	3
Industrial Laboratory	3	Industrial Laboratory	3
	17		17

SENIOR YEAR

Education 483 Basic Concepts in Education	3	Industrial Education 323 Course Making	3
Industrial Education 413 Methods of Teaching	3	Industrial Education 406 Student Teaching	6
Minor	9	Minor	9
Elective	3		
	18		18

Curriculum Outline for the Bachelor of Science Degree with a major in Industrial Arts (Plan II).

Freshman Year Same as in Plan I

SOPHOMORE YEAR

Political Science 113 National Government	3	Political Science 123 State Government	3
English 213 Public Speaking	3	English 223 Introduction to Literature	3
Drafting 203 Technical Sketching	3	Drafting (Elective)	3
Chemistry 114 Inorganic Chemistry	4	Chemistry 124 Inorganic Chemistry	4
Industrial Laboratory	3	Industrial Laboratory	3
Military Science 212 Elementary	2	Military Science 222 Elementary	2
Physical Education 211 Sophomore Practice	1	Physical Education 221 Sophomore Practice	1
	18		18

JUNIOR YEAR

First Semester	*Hrs.*
Physics 214 General Physics	4
Industrial Education 273 Classroom Organization	3
History 173 The United States 1492-1876	3
Industrial Laboratory	3
Education 313 American Public School	3
	16

Second Semester	*Hrs.*
Physics 224 General Physics	4
Education 343 Human Development and Learning	3
History 183 The United States 1876 to Present	3
Industrial Laboratory	3
Elective*	3
	16

SENIOR YEAR

Education 483 Basic Concepts of Education	3
Industrial Education 413 Methods of Teaching	3
Industrial Laboratory	9
Electives	3
	18

Industrial Education 323 Course Making	3
Industrial Education 406 Student Teaching	6
Industrial Laboratory	9
	18

COMMERCIAL FOODS CURRICULUM

Curriculum outline for Bachelor of Science Degree with a major in Vocational-Industrial Education (Teaching Commercial Foods).*

FRESHMAN YEAR

Commercial Foods 123 Nutrition	3
Commercial Foods 113 Food Products	3
Commercial Foods 115 Basic Food Preparation	5
English 113 Grammar and Composition	3
Mathematics 113 College Algebra	3
Industrial Education 111 Philosophy of Industrial Education	1
Military Science 112 Elementary	2
Physical Education 111 Freshman Practice	1
	19

Commercial Foods 163 Advanced Food Preparation	3
Commercial Foods 123 Food Service	3
Commercial Foods 125 Quantity Cookery	5
English 123 Reading and Composition	3
Mathematics 123 Trigonometry	3
Industrial Education 121 Philosophy of Industrial Education	1
Military Science 122 Elementary	2
Physical Education 121 Freshman Practice	1
	19

SUMMER INTERN

SOPHOMORE YEAR

Commercial Foods 233 Organization and Management	3
Commercial Foods 215 Food Production Management	5
History 173 American History	3
Political Science 113 National Government	3
Sociology 123 Minorities	3
Military Science 212 Elementary	2
Physical Education 211 Sophomore Practice	1
	19

Commercial Foods 283 Equipment Selection and Layout	3
Commercial Foods 263 Gourmet and International Cookery	3
Psychology 113 General Psychology	3
History 183 American History	3
Political Science 123 State Government	3
Business Administration 143 Introduction to Business	3
Military Science 222 Elementary	2
Physical Education 221 Sophomore Practice	1
	20

*Students must elect 3 semester hours from the following courses: Sociology 123; Economics 203; or Home Economics 123.

SUMMER INTERN

JUNIOR YEAR

First Semester	*Hrs.*	*Second Semester*	*Hrs.*
English 213 Fundamentals of Speech	3	English 223 Introduction to Literature	3
Economics 343 Personnel Management	3	Commercial Foods 242 Menu Planning	2
Commercial Foods 212 Sanitation	2	Foods 423 Advanced Nutrition	3
Education 313 American Public School	3	Elective	3
Chemistry 114 Inorganic Chemistry	4	Chemistry 124 Inorganic Chemistry	4
Industrial Education 273 Classroom Organization and Management	3	Education 343 Human Development and Learning	3
	18		18

SENIOR YEAR

Foods 413 Advanced Nutrition	3	Foods 443 Diet and Disease	3
Biology 334 Bacteriology	4	Biology 304 Physiology	4
Industrial Education 323 Coursemaking	3	Industrial Education 406 Student Teaching	6
Industrial Education 413 Methods of Teaching	3	Education 483 Basic Concepts in Education	3
Chemistry 314 Introductory Organic	4		16
	17		

INDUSTRIAL TECHNOLOGY CURRICULA

Curriculum outline for the Bachelor of Science Degree with a major in Industrial Technology.

FRESHMAN YEAR

Mathematics 113 College Algebra	3	Mathematics 123 Trigonometry	3
English 113 Grammar and Composition	3	English 123 Reading and Composition	3
Drafting 113 General Drafting	3	Drafting 123 General Drafting	3
Industrial Technology Lab	6	Industrial Technology Lab	6
Industrial Education 111 Philosophy of Industrial Education	1	Industrial Education 121 Philosophy of Industrial Education	1
Military Science 112 Elementary	2	Military Science 122 Elementary	2
Physical Education 111 Freshman Practice	1	Physical Education 121 Freshman Practice	1
	18		18

SOPHOMORE YEAR

English 213 Public Speaking	3	Applied Science 223 Industrial Management	3
Drafting 203 Technical Sketching	3	English 223 Introduction to Literature	3
Chemistry 114 Inorganic Chemistry	4	Drafting (Elective)	3
Industrial Technology Lab	6	Chemistry 124 Inorganic Chemistry	4
Military Science 212 Elementary	2	Industrial Technology Lab	3
Physical Education 211 Sophomore Practice	1	Military Science 222 Elementary	2
	18	Physical Education 221 Sophomore Practice	1
			18

*Students completing this curriculum meet the requirements of the American Dietetic Association for dietetic intern training.

JUNIOR YEAR

First Semester	*Hrs.*	*Second Semester*	*Hrs.*
Physics 214 General Physics	4	Physics 224 General Physics	4
Political Science 113 National Government	3	Political Science 123 State Government	3
Business Administration 143 Introduction to Business	3	Business Administration 263 Elementary Accounting	3
Business Administration 253 Elementary Accounting	3	Elective*	3
Industrial Technology Lab	3	Industrial Technology Lab	3
Typing 132 Elementary Typewriting	2	Typing 142 Elementary Typewriting	2
	18		18

SENIOR YEAR

Economics 343 Personnel Management	3	Applied Science 303 Industrial Safety	3
History 173 The United States 1492-1876	3	History 183 The United States 1492-1876	3
Elective	3	Business Administration 343 Salesmanship	3
Business Administration 373 Business Law	3	Business Administration 383 Business Law	3
Industrial Technology Lab	6	Industrial Technology Lab	6
	18		18

CURRICULUM OUTLINES FOR TWO AND THREE-YEAR TERMINAL COURSES FOR TRAINING TECHNICIANS
AIR CONDITIONING AND REFRIGERATION TECHNOLOGY

FIRST YEAR

English 113 Grammar and Composition	3	English 123 Reading and Composition	3
Mathematics 113 College Algebra	3	Mathematics 123 Trigonometry	3
Drafting 113 General Drafting	3	Air Conditioning 123 Air Conditioning II	3
Air Conditioning 113 Air Conditioning I	3	Air Conditioning 143 Refrigeration I	3
Electricity 113 Elementary Electricity	3	Electricity 123 Elementary Electricity	3
Industrial Education 111 Philosophy of Industrial Education	1	Industrial Education 121 Philosophy of Industrial Education	1
Military Science 112 Elementary	2	Military Science 122 Elementary	2
Physical Education 111 Freshman Practice	1	Physical Education 121 Freshman Practice	1
	18		18

SECOND YEAR

Political Science 103 State and National Government	3	Sociology 263 General Sociology	3
Physics 214 General Physics	4	Physics 224 General Physics	4
Air Conditioning 213 Refrigeration II	3	Air Conditioning 223 Advanced Refrigeration	3
Air Conditioning 233 Heating and Ventilation	3	Air Conditioning 243 Air Conditioning Design	3
Air Conditioning 253 Advanced Air Conditioning	3	Air Conditioning 263 Air Conditioning Controls	3
Military Science 212 Elementary	2	Military Science 222 Elementary	2
Physical Education 211 Sophomore Practice	1	Physical Education 221 Sophomore Practice	1
	18		18

*Students must elect 3 semester hours from the following courses: Sociology 123; Economics 203; or Home Economics 123.

AUTOMOTIVE TECHNOLOGY

FIRST YEAR

First Semester	*Hrs.*	*Second Semester*	*Hrs.*
Drafting 113 General Drafting	3	Drafting 123 General Drafting	3
Applied Science 133* Technical Mathematics	3	Applied Science 143* Technical Mathematics	3
English 113 Grammar and Composition	3	English 123 Reading and Composition	3
Industrial Education 111 Philosophy of Industrial Education	1	Industrial Education 121 Philosophy of Industrial Education	1
Auto Tech 153 Auto Testing and Lab	3	Auto Tech 163 Auto Testing and Lab	3
Auto Tech 133 The Chassis	3	Auto Tech 123 Power I	3
Military Science 112 Elementary	2	Military Science 122 Elementary	2
Physical Education 111 Freshman Practice	1	Physical Education 121 Freshman Practice	1
	18		18

SECOND YEAR

Applied Science 213 Business Relations	3	Applied Science 223 Industrial Management	3
Metal Tech 113 Bench Work	3	Welding Tech 103 General Welding	3
Science 113 College Science	3	Sociology 263 General Sociology	3
Auto Tech 213 The Fuel System	3	Auto Tech 263 The Chassis II	3
Auto Tech 233 The Electrical System	3	Auto Tech 243 Power II	3
Military Science 212 Elementary	2	Military Science 222 Elementary	2
Physical Education 211 Sophomore Practice	1	Physical Education 221 Sophomore Practice	1
	18		18

BUILDING CONSTRUCTION TECHNOLOGY

FIRST YEAR

Drafting 113 General Drafting	3	Drafting 123 General Drafting	3
Applied Science 133* Technical Mathematics	3	Applied Science 143* Technical Mathematics	3
English 113 Grammar and Composition	3	English 123 Reading and Composition	3
Industrial Education 111 Philosophy of Industrial Education	1	Industrial Education 121 Philosophy of Industrial Education	1
Carpentry 117 Elementary Carpentry I	7	Carpentry 127 Elementary Carpentry II	7
Military Science 112 Elementary	2	Military Science 122 Elementary	2
Physical Education 111 Freshman Practice	1	Physical Education 121 Freshman Practice	1
	19		19

SECOND YEAR

Painting 123 Elementary Painting	3	Drafting 243 Architectural Drafting	3
Carpentry 217 Advanced Carpentry I	7	Carpentry 227 Advanced Carpentry II	7
Plumbing 113 Elementary Plumbing	3	Plumbing 123 Elementary Plumbing	3
Masonry 113 Elementary Masonry	3	Masonry 123 Elementary Masonry	3
Military Science 212 Elementary	2	Military Science 222 Elementary	2
Physical Education 211 Sophomore Practice	1	Physical Education 221 Sophomore Practice	1
	18		18

THIRD YEAR

First Semester	*Hrs.*	*Second Semester*	*Hrs.*
Applied Science 213 Business Relations	3	Applied Science 223 Industrial Management	3
Science 113 College Science	3	Sociology 263 General Sociology	3
Plumbing 213 Advanced Plumbing	3	Plumbing 223 Advanced Plumbing	3
Masonry 213 Advanced Masonry	3	Masonry 223 Advanced Masonry	3
Electricity 113 Electrical Wiring	3	Electricity 123 Electrical Wiring	3
Drafting 352 Estimating and Construction Cost	2	Applied Science 303 Industrial Safety	3
	17		18

DRAFTING TECHNOLOGY

FIRST YEAR

English 113 Grammar and Composition	3	English 123 Reading and Composition	3
Mathematics 113 College Algebra	3	Mathematics 123 Trigonometry	3
Industrial Education 111 Philosophy of Industrial Education	1	Industrial Education 121 Philosophy of Industrial Education	1
Drafting 113 General Drafting	3	Drafting 123 General Drafting	3
Science 113 College Science	3	Drafting 263 Architectural Drafting	3
Drafting 203 Technical Sketching	3	Drafting 303 Materials, Methods of Construction	3
Military Science 112 Elementary	2	Military Science 122 Elementary	2
Physical Education 111 Freshman Practice	1	Physical Education 121 Freshman Practice	1
	18		18

SECOND YEAR

Applied Science 213 Business Relations	3	Applied Science 223 Industrial Management	3
Drafting 353 Residential Planning	3	Drafting 363 Commercial Building Planning	3
Drafting 373 Residential Design	3	Drafting 383 Commercial Building Design	3
Drafting 393 Building Equipment	3	Drafting 403 Machine Drafting	3
Drafting 352 Construction Cost and Estimating	2	Electives	4
Sociology 123 Minorities	3	Military Science 222 Elementary	2
Military Science 212 Elementary	2	Physical Education 221 Sophomore Practice	1
Physical Education 211 Sophomore Practice	1		18
	19		

ELECTRICAL TECHNOLOGY (Construction)

FIRST YEAR

Drafting 113 General Drafting	3	Drafting 123 General Drafting	3
Applied Science 133* Technical Mathematics	3	Applied Science 143* Technical Mathematics	3
Industrial Education 111 Philosophy of Industrial Education	1	Industrial Education 121 Philosophy of Industrial Education	1
English 113 Grammar and Composition	3	English 123 Reading and Composition	3
Electricity 114 Elementary Electricity	4	Electricity 124 Elementary Electricity	4
Electricity 113 Electrical Wiring and Repair	3	Electricity 123 Electrical Wiring and Repair	3
Military Science 112 Elementary	2	Military Science 122 Elementary	2
Physical Education 111 Freshman Practice	1	Physical Education 121 Freshman Practice	1
	19		19

SECOND YEAR

First Semester	*Hrs.*	*Second Semester*	*Hrs.*
Applied Science 213 Business Relations	3	Applied Science 223 Industrial Management	3
Electricity 232 D.C. Motor-Generator Repair	2	Electricity 242 A.C. Motor-Generator Repair	2
Science 113 College Science	3	Sociology 263 General Sociology	3
Electricity 217 Electrical Wiring and Illumination	7	Electricity 227 Electrical Wiring and Illumination	7
Military Science 212 Elementary	2	Military Science 222 Elementary	2
Physical Education 211 Sophomore Practice	1	Physical Education 221 Sophomore Practice	1
	17		17

ELECTRONIC TECHNOLOGY

FIRST YEAR

Drafting 113 General Drafting	3	Drafting 123 General Drafting	3
Applied Science 133 Technical Mathematics	3	Applied Science 143 Technical Mathematics	3
English 113 Grammar and Composition	3	English 123 Reading and Composition	3
Industrial Education 111 Philosophy of Industrial Education	1	Industrial Education 121 Philosophy of Industrial Education	1
Electronics 113 Electrical Circuits	3	Electronics 121 Communications I	1
Electronics 134 Basic Electronics I	4	Electronics 123 Basic Electronics II	3
Military Science 112 Elementary	2	Electronics 144 Radio Receivers	4
Physical Education 111 Freshman Practice	1	Military Science 122 Elementary	2
	19	Physical Education 121 Freshman Practice	1
			20

SECOND YEAR

Mathematics 113 College Algebra	3	Mathematics 123 Trigonometry	3
Applied Science 213 Business Relations	3	Applied Science 223 Industrial Management	3
Electronics 234 Television	4	Electronics 224 Testing & Servicing	4
Electronics 214 Electronic Circuits & Systems	4	Electronics 244 Color Television	4
Electronics 253 Test Instruments	3	Electronics 263 Servomechanisms & Automation	3
Electronics 211 Communications II	1	Military Science 222 Elementary	2
Military Science 212 Elementary	2		19
	19		

METAL TECHNOLOGY

FIRST YEAR

Drafting 113 General Drafting	3	Drafting 203 General Drafting	3
Applied Science 133* Technical Mathematics	3	Applied Science 143* Technical Mathematics	3
English 113 Grammar and Composition	3	English 123 Reading and Composition	3
Industrial Education 111 Philosophy of Industrial Education	1	Industrial Education 121 Philosophy of Industrial Education	1
Welding Tech 113 Electrical Welding	3	Welding Tech 123 Gas Welding	3
Metal Tech 113 Bench Metal	3	Metal Tech 123 Machine Work	3
Military Science 112 Elementary	2	Military Science 122 Elementary	2
Physical Education 111 Freshman Practice	1	Physical Education 121 Freshman Practice	1
	18		18

SECOND YEAR

First Semester	*Hrs.*
Applied Science 213 Business Relations	3
Foundry Tech 213 Foundry I	3
Science 113 College Science	3
Metal Tech 213 Advanced Machine Shop	3
Welding Tech 213 Advanced Electric	3
Military Science 212 Elementary	2
Physical Education 211 Sophomore Practice	1
	17

Second Semester	*Hrs.*
Applied Science 223 Industrial Management	3
Sociology 263 General Sociology	3
Foundry Tech 223 Foundry II	3
Metal Tech 323 Materials and Processes	3
Welding Tech 223 Advanced Gas	3
Military Science 222 Elementary	2
Physical Education 221 Sophomore Practice	1
	17

TECHNICAL EDUCATION CURRICULA

Curriculum outline for the Bachelor of Science Degree with a major in Industrial Education (Non-Teaching).

FRESHMAN YEAR

Mathematics 113 College Algebra	3
English 113 Grammar and Composition	3
Drafting 113 General Drafting	3
Industrial Lab	6
Industrial Education 111 Philosophy of Industrial Education	1
Military Science 112 Elementary or	2
Physical Education 111 Freshman Practice	1
	18

Mathematics 123 Trigonometry	3
English 123 Reading and Comopsition	3
Drafting 123 General Drafting	3
Industrial Lab	6
Industrial Education 121 Philosophy of Industrial Education	1
Military Science 122 Elementary or	2
Physical Education 121 Freshman Practice	1
	18

SOPHOMORE YEAR

English 213 Public Speaking	3
Drafting 203 Technical Sketching	3
Chemistry 114 Inorganic Chemistry	4
Industrial Lab.	6
Military Science 212 Elementary or	2
Physical Education 211 Sophomore Practice	1
	18

Applied Science 223 Industrial Management	3
English 223 Introduction to Literature	3
Drafting (Elective)	3
Chemistry 124 Inorganic Chemistry	4
Industrial Lab	3
Military Science 222 Elementary or	2
Physical Education 221 Sophomore Practice	1
	18

JUNIOR YEAR

Physics 214 General Physics	4
Political Science 113 National Government	3
Business Administration 143 Introduction to Business	3
Business Administration 253 Elementary Accounting	3
Industrial Lab	3
Typing 132 Elementary Typewriting	2
	18

Physics 224 General Physics	4
Political Science 123 State Government	3
Business Administration 263 Elementary Accounting	3
Elective*	3
Industrial Lab	2
Typing 142 Elementary Typewriting	2
	18

SENIOR YEAR

First Semester	*Hrs.*
Economics 343	3
Personnel Management	
History 173	3
The United States 1492-1876	
Elective	3
Business Administration 373	3
Business Law	
Industrial Lab	6
	18

Second Semester	*Hrs.*
Applied Science 303	3
Industrial Safety	
History 183	3
The United States 1492-1876	
Business Administration 343	3
Salesmanship	
Business Administration 383	3
Business Law	
Industrial Lab	6
	18

COMMERCIAL FOODS CURRICULUM

Curriculum outline for the Bachelor of Science Degree with a major in Food Service Administration.*

FRESHMAN YEAR

Commercial Foods 123	3
Nutrition	
Commercial Foods 113	3
Food Products	
Commercial Foods 115	5
Basic Food Preparation	
English 113	3
Grammar and Composition	
Mathematics 113	3
College Algebra	
Industrial Education 111	1
Philosophy of Industrial Education	
Military Science 112	2
Elementary	
Physical Education 111	1
Freshman Practice	
	20

Commercial Foods 163	3
Advanced Food Preparation	
Commercial Foods 123	3
Food Service	
Commercial Foods 125	5
Quantity Cooking	
English 123	3
Reading and Composition	
Mathematics 123	3
Trigonometry	
Industrial Education 121	1
Philosophy of Industrial Education	
Military Science 122	2
Elementary	
Physical Education 121	1
Freshman Practice	
	20

SUMMER INTERN

SOPHOMORE YEAR

Commercial Foods 233	3
Organization and Management	
Commercial Foods 215	5
Food Production Management	
History 173	3
American History	
Political Science 113	3
National Government	
Sociology 103	3
The Family	
Military Science 212	2
Elementary	
Physical Education 211	1
Sophomore Practice	
	19

Commercial Foods 283	3
Equipment Selection & Layout	
Commercial Foods 263	3
Gourmet and International Cookery	
Psychology 113	3
General Psychology	
History 183	3
American History	
Political Science 123	3
State Government	
Business Administration 143	3
Introduction to Business	
Military Science 222	2
Elementary	
Physical Education 221	1
Sophomore Practice	
	20

*Students must elect 3 semester hours from the following courses: Sociology 123; Economics 203; or Home Economics 123.

SUMMER INTERN

JUNIOR YEAR

First Semester	*Hrs.*	*Second Semester*	*Hrs.*
English 213	3	English 223	3
Fundamentals of Speech		Introduction to Literature	
Economics 343	3	Commercial Foods 242	2
Personnel Management		Menu Planning	
Commercial Foods 212	2	Foods 423	3
Sanitation		Advanced Nutrition	
Education 313	3	Typing 142	2
American Public School		Elementary Typewriting	
Chemistry 114	4	Chemistry 124	4
Inorganic Chemistry		Inorganic Chemistry	
Typing 132	2	Education 343	3
Elementary Typewriting		Human Development and Learning	
	17		17

SENIOR YEAR

Foods 413	3	Foods 443	3
Advanced Nutrition		Diet and Disease	
Biology 334	4	Biology 304	4
Bacteriology		Physiology	
Business Administration 253	3	Business Administration 263	3
Elementary Accounting		Elementary Accounting	
Business Administration 373	3	Business Administration 383	3
Business Law		Business Law	
Chemistry 314	4	Business Administration 343	3
Inorganic Chemistry		Salesmanship	
	17		16

CURRICULUM OUTLINES FOR TERMINAL PROGRAMS IN TECHNICAL EDUCATION

BRICKMASONRY

FIRST YEAR

Drafting 113	3	Drafting 123	3
General Drafting		General Drafting	
Applied Science 133*	3	Applied Science 143*	3
Technical Mathematics		Technical Mathematics	
Industrial Education 111	1	Industrial Education 121	1
Philosophy of Industrial Education		Philosophy of Industrial Education	
English 113	3	English 123	3
Grammar and Composition		Reading and Composition	
Masonry 117	7	Masonry 127	7
Elementary Masonry		Elementary Masonry	
Military Science 112	2	Military Science 122	2
Elementary		Elementary	
Physical Education 111	1	Physical Education 121	1
Freshman Practice		Freshman Practice	
	19		19

SECOND YEAR

Applied Science 213	3	Applied Science 223	3
Business Relations		Industrial Management	
Carpentry 204	4	Drafting 263	3
General Carpentry		Architectural Drafting	
Science 113	3	Sociology 263	3
College Science		General Sociology	
Masonry 217	7	Masonry 227	7
Advanced Masonry		Advanced Masonry	
Military Science 212	2	Military Science 222	2
Elementary		Elementary	
Physical Education 211	1	Physical Education 221	1
Sophomore Practice		Sophomore Practice	
	18		19

*Students completing this curriculum meet the requirements of the American Dietetic Association for dietetic intern training.

CARPENTRY

FIRST YEAR

First Semester	*Hrs.*	*Second Semester*	*Hrs.*
Drafting 113 General Drafting	3	Drafting 123 General Drafting	3
Applied Science 133* Technical Mathematics	3	Applied Science 143* Technical Mathematics	3
English 113 Grammar and Composition	3	English 123 Reading and Composition	3
Industrial Education 111 Philosophy of Industrial Education	1	Industrial Education 121 Philosophy of Industrial Education	1
Carpentry 117 Elementary Carpentry I	7	Carpentry 127 Elementary Carpentry II	7
Military Science 112 Elementary	2	Military Science 122 Elementary	2
Physical Education 111 Freshman Practice	1	Physical Education 121 Freshman Practice	1
	19		19

SECOND YEAR

Applied Science 213 Business Relations	3	Applied Science 223 Indsutrial Management	3
Painting 123 Elementary Painting	3	Drafting 243 Architectural Drafting	3
Science 113 College Science	3	Sociology 263 General Sociology	3
Carpentry 217 Advanced Carpentry I	7	Carpentry 227 Advanced Carpentry II	7
Military Science 212 Elementary	2	Military Science 222 Elementary	2
Physical Education 211 Sophomore Practice	1	Physical Education 221 Sophomore Practice	1
	18		18

COMMERCIAL FOODS

FIRST YEAR

Commercial Foods 123 Nutrition	3	Commercial Foods 163 Advanced Food Preparation	3
Commercial Foods 113 Food Products	3	Commercial Foods 123 Food Service	3
Commercial Foods 115 Basic Food Preparation	5	Commercial Foods 125 Quantity Cooking	5
English 113 Grammar and Composition	3	English 123 Reading and Composition	3
Applied Science 133 Technical Mathematics	3	Sociology 123 Minorities	3
Industrial Education 111 Philosophy of Industrial Education	1	Industrial Education 121 Philosophy of Industrial Education	1
Military Science 112 Elementary	2	Military Science 122 Elementary	2
Physical Education 111 Freshman Practice	1	Physical Education 121 Freshman Practice	1
	19		19

SECOND YEAR

Commercial Foods 212 Sanitation	2	Commercial Foods 263 Gourmet and International Cookery	3
Commercial Foods 233 Organization and Management	3	Commercial Foods 242 Menu Planning	2
Commercial Foods 215 Food Production and Management	5	Commercial Foods 225 Food Production Management	5
Applied Science 137 Industrial Production Techniques	7	Applied Science 127 Small Business Management	7
	17		17

DRY CLEANING

FIRST YEAR

First Semester	*Hrs.*	*Second Semester*	*Hrs.*
Drafting 113 General Drafting	3	Drafting 123 General Drafting	3
Applied Science 133* Technical Mathematics	3	Applied Science 143* Technical Mathematics	3
English 113 Grammar and Composition	3	English 123 Reading and Composition	3
Dry Cleaning 117 Dry Cleaning	7	Dry Cleaning 127 Dry Cleaning	7
Industrial Education 111 Philosophy of Industrial Education	1	Industrial Education 121 Philosophy of Industrial Education	1
Military Science 112 Elementary	2	Military Science 122 Elementary	2
Physical Education 111 Freshman Practice	1	Physical Education 121 Freshman Practice	1
	19		19

SECOND YEAR

Applied Science 213 Business Relations	3	Applied Science 223 Industrial Management	3
Tailoring 113 Elementary Tailoring	3	Tailoring 123 Elementary Tailoring	3
Science 113 College Science	3	Sociology 263 General Sociology	3
Dry Cleaning 217 Dry Cleaning	7	Dry Cleaning 227 Dry Cleaning	7
Military Science 212 Elementary	2	Military Science 222 Elementary	2
Physical Education 211 Sophomore Practice	1	Physical Education 221 Sophomore Practice	1
	18		18

PAINTING

FIRST YEAR

Drafting 113 General Drafting	3	Drafting 123 General Drafting	3
Applied Science 133* Technical Mathematics	3	Applied Science 143* Technical Mathematics	3
Industrial Education 111 Philosophy of Industrial Education	1	Industrial Education 121 Philosophy of Industrial Education	1
English 113 Grammar and Composition	3	English 123 Reading and Composition	3
Painting 117 Elementary Painting	7	Painting 127 Elementary Painting	7
Military Science 112 Elementary	2	Military Science 122 Elementary	2
Physical Education 111 Freshman Practice	1	Physical Education 121 Freshman Practice	1
	19		19

SECOND YEAR

Applied Science 213 Business Relations	3	Applied Science 223 Industrial Management	3
Painting 213 Furniture Finishing	3	Carpentry 224 General Carpentry	4
Science 113 College Science	3	Sociology 263 General Sociology	3
Painting 217 Advanced Painting	7	Painting 227 Advanced Painting	7
Military Science 212 Elementary	2	Military Science 222 Elementary	2
Physical Education 211 Sophomore Practice	1	Physical Education 221 Sophomore Practice	1
	18		19

PLUMBING

FIRST YEAR

First Semester	*Hrs.*	*Second Semester*	*Hrs.*
Drafting 113	3	Drafting 123	3
General Drafting		General Drafting	
Applied Science 133*	3	Applied Science 143*	3
Technical Mathematics		Technical Mathematics	
Industrial Education 111	1	Industrial Education 121	1
Philosophy of Industrial Education		Philosophy of Industrial Education	
English 113	3	English 123	3
Grammar and Composition		Reading and Composition	
Plumbing 117	7	Plumbing 127	7
Industrial and Elementary Plumbing		Industrial and Elementary Plumbing	
Military Science 112	2	Military Science 122	2
Elementary		Elementary	
Physical Education 111	1	Physical Education 121	1
Freshman Practice		Freshman Practice	
	19		19

SECOND YEAR

Applied Science 213	3	Applied Science 223	3
Business Relations		Industrial Management	
Welding Tech 103	3	Metal Tech 133	3
General Welding		Elementary Sheet Metal	
Science 113	3	Sociology 263	3
College Science		General Sociology	
Plumbing 217	7	Plumbing 227	7
Advanced Plumbing		Advanced Plumbing	
Military Science 212	2	Military Science 222	2
Elementary		Elementary	
Physical Education 211	1	Physical Education 221	1
Sophomore Practice		Sophomore Practice	
	19		19

PRINTING

FIRST YEAR

English 113	3	English 123	3
Grammar and Composition		Reading and Composition	
Applied Science 133*	3	Applied Science 143*	3
Technical Mathematics		Technical Mathematics	
Printing 112	2	Printing 124	4
Typography I		Typography II	
Printing 152	2	Printing 162	2
Platen Presswork I		Cylinder Presswork I	
Printing 113	3	Printing 172	2
Graphic Arts Survey		Platen Presswork II	
Printing 133	3	Printing 182	2
Lettering, Design and Lettering		Machine Composition	
Industrial Education 111	1	Industrial Education 121	1
Philosophy of Industrial Education		Philosophy of Industrial Education	
Military Science 112	2	Military Science 122	2
Elementary		Elementary	
Physical Education 111	1	Physical Education 121	1
Freshman Practice		Freshman Practice	
	19		19

SECOND YEAR

Applied Science 213	3	Sociology 263	3
Business Relations		General Sociology	
Printing 121	1	Printing 262	2
Bindery Operations		Cylinder Presswork III	
Printing 252	2	Printing 283	3
Cylinder Presswork II		Machine Composition III	
Printing 273	3	Printing 222	2
Machine Composition II		Typography IV	
Printing 212	2	Printing 243	3
Estimating		Plant Management	
Electives	2	Printing 294	4
Printing 234	4	Printing Production	
Typography III		Military Science 222	2
Military Science 212	2	Elementary	
Elementary		Physical Education 221	1
Physical Education 211	1	Sophomore Practice	
Sophomore Practice			
	19		19

SHOE REPAIR

FIRST YEAR

First Semester	*Hrs.*	*Second Semester*	*Hrs.*
Drafting 113	3	Drafting 123	3
General Drafting		General Drafting	
Applied Science 133*	3	Applied Science 143*	3
Technical Mathematics		Technical Mathematics	
English 113	3	English 123	3
Grammar and Composition		Reading and Composition	
Industrial Education 111	1	Industrial Education 121	1
Philosophy of Industrial Education		Philosophy of Industrial Education	
Shoe Repair 117	7	Shoe Repair 127	7
Shoemaking		Shoemaking	
Military Science 112	2	Military Science 122	2
Elementary		Elementary	
Physical Education 111	1	Physical Education 121	1
Freshman Practice		Freshman Practice	
	19		19

SECOND YEAR

Applied Science 213	3	Applied Science 223	3
Business Relations		Industrial Management	
Elective	3	Leatherwork 203	3
Shoe Repair 217	7	Leathercraft	
Shoemaking		Shoe Repair 227	7
Science 113	3	Shoemaking	
College Science		Sociology 263	3
Military Science 212	2	General Sociology	
Elementary		Military Science 222	2
Physical Education 211	1	Elementary	
Sophomore Practice		Physical Education 221	1
	19	Sophomore Practice	
			19

TAILORING

FIRST YEAR

Drafting 133*	3	Drafting 143*	3
Applied Drawing I		Applied Drawing II	
Applied Science 133*	3	Applied Science 143	3
Technical Mathematics		Technical Mathematics	
English 113	3	English 123	3
Grammar and Composition		Reading and Composition	
Industrial Education 111	1	Industrial Education 121	1
Philosophy of Industrial Education		Philosophy of Industrial Education	
Tailoring 117	7	Tailoring 127	7
Elementary Tailoring		Elementary Tailoring	
Military Science 112	2	Military Science 122	2
Elementary		Elementary	
Physical Education 111	1	Physical Education 121	1
Freshman Practice		Freshman Practice	
	20		20

SECOND YEAR

Applied Science 213	3	Applied Science 223	3
Business Relations		Shop Management	
Science 113	3	Sociology 263	3
College Science		General Sociology	
Drafting 233	3	Drafting 243	3
Applied Drawing II		Applied Drawing IV	
Dry Cleaning 113	3	Electives	3
Elementary Dry Cleaning		Tailoring 225	5
Tailoring 215	5	Advanced Tailoring	
Advanced Tailoring		Military Science 222	2
Military Science 212	2	Elementary	
Elementary		Physical Education 221	1
Physical Education 211	1	Sophomore Practice	
Sophomore Practice			20
	20		

DESCRIPTION OF COURSES

INDUSTRIAL EDUCATION

111-121 Philosophy of Industrial Education. (I E 111-121 Philosophy) (1-0) Credit 1. Nature and purpose of Industrial Education. Influence of Industrial Technology upon individuals and society. Factors which influence success in industrial education.

273. Classroom Organization and Management. (I E 273 ClassrmOrgn) (3-0) Credit 3. Planning, management, organization of industrial arts classroom at secondary school level. Types of organization, arrangement of equipment, pupil personnel management. Records, including school registry, progress charts, reports, requisitions, inventories, etc.

323. Curriculum Construction and Course Making in Industrial Education. (I E 323 Curriculum). A study of industrial education curricula as used throughout leading high schools; analytical technique in curriculum construction; course making and syllabus construction.

403. Workshop and Institutes in Industrial Education. (I E 403 Workshop) Credit 3. I and II. A study of and the development of solutions for problems in Industrial Education.

A. Cosmetology Institute
B. Industrial Arts Teacher Workshop
C. Vocational-Industrial Teacher Workshop

406. Student Teaching in Industrial Education. (I E 406 Student Tchg) (2-12) Credit 6. I and II. Problems that confront beginning industrial education teachers; brief historical study of industrial education; relationship of industrial education to other phases of education; selection of subject matter; preparation and presentation of instructional materials; teaching plans, tests, and standard evaluation devices for measuring results. Directed observation of teaching, followed by actual supervised teaching for the individual student. Prerequisite: I. E. 413.

413. Methods in Industrial Education. (I E 413 Methods) (3-0) Credit 3. I. Methods, devices, techniques as applied to teaching industrial subjects; analysis and evaluation of student learning difficulties and teaching responsibilities in industrial classes; nature, preparation and use of instruction sheets.

*VOCATIONAL-INDUSTRIAL EDUCATION

The following courses are designed to meet the certificate requirements of Vocational-Industrial Education teachers under the Texas State Plan for Vocational Education. College credit may be arranged for these courses with the written approval of the teacher-trainer for Vocational Industrial Education and the Dean of the School of Industrial Education and Technology.

412. Development, Organization, and Use of Industrial Material. (I E 412 Ind Material) 45 clock hours. Study of available instructional material and its adaptation; development and preparation of teaching aids; organization and material for effective coordination with courses of study.

422. Methods of Teaching. (I E 422 Tchg Methods) 45 clock hours. Brief review of how people learn; evaluation of various teaching methods; adaptation of methods to types of lessons for effective instruction; "4-step method" of presenting lessons; analysis for lesson content; preparation of lesson plans and practice teaching.

432. Shop and Classroom Organization and Management. (I E 432 Organization) 45 clock hours. Organization plans for classrooms and shops for efficient instruction and management, including roll-keeping, grading, recording, and reporting systems; specifying, purchasing, receiving, storing, installing, and inventorying of tools, equipment, and supplies; heating, lighting, ventilation, sanitation and accident prevention; recitation and library centers; tool, supply and project storing and issuing systems.

442. Analysis and Course Making. (I E 442 Analysis) 45 clock hours. A study of analysis available in the teacher's field of work; reviewing systems of analysis; adaption of principles of analysis to fit the teacher's needs; the organization of a course of study to fit the teacher's specific needs developed from the adopted, modified, or developed analysis.

462. Aims and Objectives of Vocational Education. (I E 462 Vocatnl Educ) 30 clock hours. A basic course for administrators, supervisors, and teachers; history and aims of vocational education; its economic, social, and educational values; different phases of vocational education; Federal and State laws; training of teachers.

472. Selection, Placement, and Follow-up in Vocational Education. (I E 472 Placement) 45 clock hours. Factors which influence the schooling, work opportunities, and educational objectives of young people; techniques of interviewing and advising young people in regard to vocational courses; factors affecting placement in suitable employment either part or full-time; methods of follow-up and coordination.

482. Development and Use of Visual Aids. (I E 482 Visual Aids) 45 clock hours. The study of visual aids on the commercial market and their adaptability to vocational education; the development of types of visual aids and techniques teachers can use for more effective teaching. These are to include motion pictures, strip films, slides, cut-aways, blowups, mock-ups, posters, charts, pictures and blackboard illustrations.

492. Problems in Cooperative Training. (I E 492 Problems) 45 clock hours. A review of the duties of the teacher-coordinator; the solution of actual problems; procedures and techniques involved in community surveys; interpretation of survey data; program expansion; guidance and counseling; organization and coordination of all types of part-time and evening classes.

AIR CONDITIONING AND REFRIGERATION TECHNOLOGY

113. Air Conditioning I. (Air 113 Condition I) (1-6) Credit 3. Fundamentals of air conditioning; fluid flow analysis; thermodynamics properties of air, steam, refrigerants; heat transfer calculations; operation characteristics of heating and cooling equipment.

123. Air Conditioning II. (Air 123 Condition II) (1-6) Credit 3. Psychrometric processes, heat and cooling loads; refrigeration, heating, air handling systems; fans and ducts; pumps and piping, operation of commercial and industrial equipment.

143. Refrigeration I. (Air 143 Refrigrtn I) (1-6) Credit 3. Principles and applications of refrigeration. The refrigeration cycle, refrigerants, compressors, evaporators, condensers and control devices. Operation of refrigeration equipment.

213. Refrigeration II. (Air 213 Refrigrtn II) (1-6) Credit 3. Thermodynamic principles; single, two stage and cascade cycles; low temperature units; liquid chilling apparatus; operation of commercial and industrial equipment.

233. Heating and Ventilation Systems. (Air 233 Heat Systems) (1-6) Credit 3. Forced warm air systems; duct design, air distribution; operation of equipment. Hot water systems, piping layout and design, equipment selection and operation.

253. Advanced Air Conditioning. (Air 253 Adv Air Cond) (1-6) Credit 3. Advanced psychometry. Air duct systems; air distribution selection; performance ratings. Advanced commercial and industrial application.

223. Advanced Refrigeration. (Air 223 Adv Refrig) (1-6) Credit 3. Advanced applications of refrigeration and air conditioning systems. Installation, operation, balancing, trouble-shooting of all types of units.

243. Air Conditioning Design. (Air 243 Design) (1-6) Credit 3. Layout and Design of air conditioning systems in residential, commercial and industrial establishments. Heat and cooling load calculation; equipment selection; system layout, cost estimation.

263. Air Conditioning Controls. (Air 263 Controls) (1-6) Credit 3. Electric and pneumatic control systems for heating and air conditioning. Types, purposes, applications of controls for heating, cooling, ventilation and humidity correction apparatus.

APPLIED SCIENCE

114, 107, 117, 127. Small Business Management. (ApSc 114, 107, 117, 127 Business Mgt) (3-12) Credit 4 to 7. I and II. Theory and practice of organizing and managing a small business; personnel, materials, equipment, wage systems and cost control. Course especially designed for industrial rehabilitation students.

133-143. Technical Mathematics. (ApSc 133-143 Tech Math) (3-0) Credit 3. I, II. Mathematics needed by persons entering technical fields in industry; treatment of arithmetic computations, plane and solid geometry, applied algebra and functional trigonometry. Stress is given to the application of mathematics in technical fields.

134, 137, 147, 207. Industrial Production Techniques. (ApSc 134, 137, 147, 207 Ind Productn) (3-12) Credit 3 to 7. I, II. Analysis of production jobs; time and motion studies as applied to production techniques; actual practice through work under actual production conditions in various industries.

202-203. Household Mechanics. (ApSc 202-203 Hsehld Mech) (2-3) Credit 2-3. I. Practical and the theoretical training in the maintenance of various home appliances; the upkeep of household furnishings; fire protection and minor repairs. Lab fee: $2.00.

213. Business Relations. (ApSc 213 Business) (3-0) Credit 3. I. Basic principles of business involved in building contracting or operating a small trade and industrial shop.

223. Industrial Management. (ApSc 223 Management) (3-0) Credit 3. I. Problems of managing a building contracting company or a small trade and industrial shop, industrial shop planning, selection of equipment and personnel, cost and wage analysis, design of production flow systems, and material purchasing.

303. Industrial Safety. (ApSc 303 Ind Safety) (3-0) Credit 3. I or II. Organization and administration of accident prevention and safety education programs in industry, case studies of industrial accidents; techniques of controlling environmental hazards; how to conduct safety inspections and investigations; application of safety engineering principles in the design, construction, utilization and maintenance of equipment; local, state, regional and national safety association.

AUDIO-VISUAL EDUCATION

Undergraduate

303. Utilization of Audio-Visual Materials. (Audo 303 Utilization) (2-3) Credit 3. I and II. Practical experience in the use of audio-visual aids, construction and development of various audio-visual aids and devices; sources of audio-visual aids; selection, evaluation and techniques of using audio-visual aids in education, study of motion picture projectors, slides, film strips, opaque projectors, etc. Lab fee: $2.00.

AUTOMOTIVE TECHNOLOGY

123-243. The Power. (Auto 123-243 Power) (0-9) Credit 3. II. A thorough and comprehensive study of the automobile engine; the principles of the internal combustion engine, the gasoline engine, and all their fundamental parts; the most common causes of engine failures; diagnosis and repair. Lab fee: $2.00.

133-263. The Chassis. (Auto 133-263 Chassis) (0-9) Credit 3. II. This unit includes a study of the purposes, structure, operation, and service of the frames, springs, shock absorbers, front end suspension, steering assembly, front end alignment, clutches, transmissions, universals, propeller shafts, final drive, brakes, and chassis lubrication. Lab fee: $2.00.

153. Elementary-163 Elementary-223 Intermediate. Auto Testing and Laboratory. (Auto 153-163-223 Auto Testing) (0-9) Credit 3. I and II. Testing diagnosis, trouble shooting and service under industrial conditions; special attention also given to service of test equipment; and, use of technical manuals and guides.

213. The Fuel System. (Auto 213 Fuel System) (9-0) Credit 3. I. This unit includes a study of the parts of the fuel system, principles of carburetion, and maintenance and service of the fuel lines, fuel pumps, filters, etc.; servicing of the most popular makes of carburetors. Lab fee: $2.00.

233. The Electrical System. (Auto 233 Elec System) (9-0) Credit 3. I. The fundamental information needed by an automobile mechanic; principles, parts, operation, maintenance, and servicing of all the units of the automobile's electrical system, including batteries, motors, generators, ignition and accessories. Lab fee: $2.00.

314-324. Advanced Auto Testing and Laboratory. (Auto 314-324 Adv Testing) (1-9) Credit 4. I or II. Advanced testing, diagnosis, trouble shooting, and service under industrial conditions; special attention also given to service of test equipment; and use of technical manuals and guides.

CARPENTRY

117. Elementary Carpentry I. (Carp 117 Elem I) (2-15) Credit 7. I. Name, use and care of tools, materials and equipment; woods, wood joints, techniques and methods of house construction; surveying and study building sites, laying out from blueprints, practicing elementary frame construction. Lab fee: $3.00.

127. Elementary Carpentry II. (Carp 127 Elem II) (2-15) Credit 7. II. Continuation of Carpentry 117. Study and practice in the various methods, techniques and styles of framing; simple rafter cutting and stair building.

204. General Carpentry. (Carp 204 General) (2-6) Credit 4. I and II. Designed for Industrial Education students. Information and skills in the layout, framing, and finishing small frame buildings. Lab fee: $2.00.

217. Advanced Carpentry I. (Carp 217 Advanced I) (2-15) Credit 7. I. Continuation of Carpentry 127. Advanced framing complex roof and stair construction; close-in and finished carpentry work studied and practiced; hardware and other utilities installed and studied. Lab fee: $3.00.

227. Advanced Carpentry. (Carp 227 Advanced II) (2-15) Credit 7. Continuation of Carpentry 217. The use of power machines in carpentry work; techniques of mass production in the manufacture of prefabricated homes; millwork techniques in the construction of cabinets, stairs, doors, windows, interior and exterior trim. Lab fee: $3.00.

CRAFTS

112-3. Elementary Photography. (Crft 112-113 Elem Photo) (0-6) (1-6) Credit 2-3. I and II. The picture making process; cameras, enlargers, printer, film, papers, elementary skill in developing, processing and printing.

122-3. Advanced Photography. (Crft 122-123 Adv Photo) (0-6) (1-6) Credit 2 or 3. I and II. Advanced techniques in picture making process; introduction to commercial, news, portrait photography; stress on good composition and effective presentations.

152-153. General Crafts. (Crft 152-153 Gen Crfts) (0-6) (1-6) Credit 2 or 3. I and II. Creative handicraft activities in leather, plastic, metal, wood, weaving, rubber, glass, ceramics and other media. Special attention to the needs of teachers, recreational leaders, occupational therapists.

132-133. Art Metal. (Crft 132-133 Art Metal) (0-6) (1-6) Credit 2-3. I, II. Designing, laying out, shaping, polishing, finishing aluminum, pewter, copper, brass and silver. Lab fee: $2.00.

202-203. Leathercraft. (Crft 202-203 Leathercraft) (0-6) (1-6) Credit 2-3. I, II. Designing, laying out, cutting, tooling, dyeing, lacing construction of project in leather. Lab fee: $2.00.

232-233. Ceramics. (Crft 232-233 Ceramics) (0-6) (1-6) Credit 2 or 3. I. Basic forming techniques; throwing and casting, properties of clays and glazes; kiln firing.

242-243. Jewelry. (Crft 242-243 Jewelry) (0-6) (1-6) Credit 2 or 3. I. Creative design and construction of jewerly; introduction to lapidary, proper selection and use of tools, materials, supplies and equipment.

312-313. Advanced Ceramics. (Crft 312-313 Adv Ceramics) (0-6) (1-6) Credit 2 or 3. I. Advanced forming techniques; design of ceramic products; advanced processes in casting and wheel work; advanced glazing techniques; kiln control and construction.

COMMERCIAL FOOD

113. Elementary Food Products. (CF 113 Products) (3-0) Credit 3. I. Food products; their quality, source availability, distribution and storage, to serve as a basis for purchase of such commodities for commercial food service.

123. Food Service. (CF 123 Food Service) (3-0) Credit 3. II. Proper methods, organization, handling and serving of foods for banquets, buffets, cafeterias, catering and special occasions.

133. Nutrition. (CF 133 Nutrition) (3-0) Credit 3. I. Nutritional standards as applied to commercial foods, including the various nutrients in food and their relation to health.

115. Basic Food Preparation. (CF 115 Preparation) (1-12) Credit 5. I. Application of basic fundamental principles and skills proven necessary in quality food production for commercial food service.

125. Quantity Cookery. (CF 125 Quan Cookery) (1-12) Credit 5. II. Quantity food production and service; including principles and methods of selecting, purchasing, budgeting and preparing foods for commercial food service.

215-225. Food Production Management. (CE 215-225 Productn Mgt) (1-12) Credit 5. I, II. Advanced food production and management; application of principles of food preparation in large quantities; standardizing formulas as dealt with in quantity, manipulation and cost control.

222. Advanced Food Products. (CF 222 Products) Advanced study of food products and their use in commercial institutions.

253. Advanced Food Preparation. (CF 253 Preparation) (2-3) Credit 3. I. Emphasis on the finer techniques of skills required for more efficient food production.

263. Gourmet and International Cusine. (CF 263 Gourmet) (1-6) Credit 3. I. Art and science of cookery in relation to national, racial, social, economic, regional and religious customs including the aesthetic values of food.

212. Sanitation. (CF 212 Sanitation) (2-0) Credit 2. I. Principles of sanitation as applied to food handling, management, storage and personnel in hotels, restaurants and institutions.

233. Organization and Management. (CF 233 Organization) (3-0) Credit 3. I. Principles of organization, supervision and personnel management; examination of the food service manager and dietitian duties in regard to food, supplies and equipment purchasing, cost and wage systems, insurance and legal aspects.

242. Menu Planning. (CF 242 Menu Plng) (2-0) Credit 3. II. Principles and practices of menu planning for hotels, restaurants and institutional food service; menu terms; merchandising practices.

283. Equipment Selection and Layout. (CF 283 Equip Selec) (3-0) Credit 3. II. Layout and design of food service facilities with emphasis on selection, specifications, maintenance and spatial relations.

DRAFTING AND DESIGN

113-123. General Drafting. (Drft 113-123 General) (1-6) Credit 3. I, II. Lettering, sketching, use of instruments and drafting room practice. Basic theory of orthographic projection stressed.

133-143. Applied Drawing I and II. (Drft 133-143 Drawing I-II) (1-6) Credit 3. I and II. Drawing which will be in line with the student's needs in applying it to a trade where such a specific course is not otherwise designated. Lab fee: $2.00.

203. Technical Sketching. (Drft 203 Sketching) (1-6) Credit 3. I, II. Freehand drawing and design as applied to industrial products.

233-243. Applied Drawing III and IV. (Drft 233-243 Drawing III-IV) (1-6) Credit 3. I and II. An advanced drawing course in line with the student's needs in applying it to a trade where such a specific course is not otherwise designated. Lab fee: $2.00.

263. Architectural Drafting. (Drft 263 Architectural) (1-6) Credit 3. II. Application of basic drafting of Architectural working drawings, in terms of plans, sections and elevation, building details are studied utilizing standard components obtained from such references as Sweet's Catalog and Architectural Graphic Standards.

303. Materials and Methods of Construction. (Drft 303 Materials) (1-6) Credit 3. I, II. Construction practices for wood and masonry construction; foundations, framing systems, manufacture and performance characteristics of building materials.

313. Design. (Drft 313 Design) (1-6) Credit 3. I and II. A study of line, color, form and their organic relationship; study of design principles; opportunity for creative expression in three dimensional form using woods, metals, plastic, glass, stone, etc. Lab fee: $2.00.

352. Construction Cost and Estimating. (Drft 352 Const Cost) (1-3) Credit 2. I. Preparation of materials list and take off quantities of materials and labor hours from working drawings and specifications.

353. Residential Planning. (Drft 353 Res Planning) (1-6) Credit 3. I. Developing complete sets of working drawings, including plans, schedules, elevations and details of Residential Buildings. Typical problems involving wood frame, brick veneer, masonry veneer and masonry wall bearing structures; preparation of specifications.

363. Commercial Building Planning. (Drft. 363 Bldg Plan) (1-6) Credit 3. I. Developing complete sets of working drawings, including plans, schedules, elevations and details of commercial buildings. Typical problems involving masonry veneer and masonry wall bearing structures. Preparing specifications included.

373. Residential Design. (Drft 373 Res Design) (1-6) Credit 3. I. Fundamental principles of Residential Design, space relationship, color harmony, materials and textures, includes an introduction to presentation methods.
383. Commercial Building Design. (Drft 383 Bldg Design) (1-6) Credit 3. II. Application of design principles to the design of small commercial buildings.

393. Building Equipment. (Drft 383 Bldg Equip) (1-6) Credit 3. I or II. Electrical wiring and equipment, heating and ventilating, plumbing and sanitation. Discussions include the various systems, the equipment involved and design procedure.

403. Machine Drafting. (Drft 403 Machine) (1-6) Credit 3. I or II. A study of working drawings as applied to the machine shop with emphasis on relationship of views and dimensioning, correct interpretation of scale measurement and tolerance, application and the interpretation of symbols and notes.

423. Drafting Room Procedures. (Drft 423 Procedures) (1-6) Credit 3. I, II. Standard Drafting Room procedures found in industry; responsibilities of the draftsman as technician or technical aide, drafting room techniques, materials, supplies, equipment, technical library.

DRIVER EDUCATION

102-202. Driver Education. (Auto 102-202 Driver Educ) (0-6) Credit 2. I, II. A basic course in driver education devoted to traffic rules, regulations, and laws; knowledge of automobile operations; sound driving practices, and designed to give limited drivers and none drivers the fundamental driving skills necessary for sound driving practices and to secure an operator's license. Lab fee: $2.00.

303. Driver Education. (Auto 303 Driver Educ) (1-6) Credit 3. I, II. Preparation for teaching driver education in workshops or secondary schools; state laws and regulations, safety practice, teaching methods, course construction, testing, devices, psycho-physical traits and measurements; principles and methods of road skill testing; practice training drivers using a dual control car. Lab fee: $3.00.

DRY CLEANING

112-122. Dry Cleaning. (Drcl 112-122 Dry Cleaning) (0-6) Credit 2. I and II. Dry Cleaning as an industry course for School of Arts and Sciences students only. Lab fee: $2.00.

113. Dry Cleaning. (Drcl 113 Dry Cleaning) (0-9) Credit 3. I. First steps in the care of fabrics; woven fabric construction; leathers and fur; cleaning fluids other than water; inspection of materials for cleaning; dry cleaning equipment and its care; static electricity, its prevention; motors, belts and their care; dry cleaning aids. Lab fee: $2.00.

117. Dry Cleaning. (Drcl 117 Dry Cleaning) (2-15) Credit 7. I. Dry Cleaning and spotting, fibers in fabric; moisture, its source and effect; materials that may be dry cleaned; dry cleaning equipment and its care; dry cleaning solvent; inspecting garments for cleaning. Lab fee: $3.00.

123. Dry Cleaning. (Drcl 123 Dry Cleaning) (0-9) Credit 3. II. Soil in garments and sorting; care of garments in cleaning; fur and leather cleaning; purification of dirty-used solvent; first steps in the spotting of garments; wood fibers; artificial wool fibers, their behavior; pure silk, weighted silk and its behavior; rayon, two classifications discussed. Lab fee: $2.00.

127. Dry Cleaning. (Drcl 127 Dry Cleaning) (2-15) Credit 7. II. Miscellaneous cleaning problems, chemical analysis and trouble finding, spotting of garments, pure silk and its behavior and identification. Lab fee: $3.00.

213. Dry Cleaning. (Drcl 213 Dry Cleaning) (0-9) Credit 3. I. Cotton, its origin and use; linen, jute and tinsel fibers, their use, behavior and identi-

fication; identification of all fibers in plant practices; spotting basic dyestuffs, acid dyestuff, color change of dyestuff in wear, storage cleaning. Lab fee: $2.00.

217. Dry Cleaning. (Drcl 217 Dry Cleaning) (2-15) Credit 7. I. Cotton, its origin, use, behavior and identification; identification of fibers as an aid in all cleaning plant practices; basic dyestuffs; acid dyestuffs; color change of dyestuff in wear, storage, staining, cleaning; stains and how to know them. Lab fee: $3.00.

223. Dry Cleaning. (Drcl 223 Dry Cleaning) (0-9) Credit 3. II. Simple tests to know all dyestuffs; equipment, its care and operation; good and bad, in receiving dyeing; study chart for overdyeing; chart for tinting; blending colors. Lab fee: $2.00.

227. Dry Cleaning. (Drcl 227 Dry Cleaning) (2-15) Credit 7. II. Spotting tools, their use and care; wet and dry system, its use and limits; pressing, all types of materials, silk finishing; shop management. Lab fee: $3.00.

ELECTRICITY

102. Electrical Appliances. (Elec 102 Appliances) (0-6) Credit 2. I. Construction, repair, maintenance and servicing. Lab fee: $2.00.

113-123. Electrical Wiring and Repair. (Elec 113 123 Wiring) (Credit 3. I and II. Practice in house wiring; general repairs to wiring and electrical equipment; installation and servicing of motors, telephones, transformers and generators. Lab fee: $2.00.

114-124. Elementary Electricity. (Elec 114 124 Elementary) (2-0) Credit 4. I and II. Fundamental principles of electricity and electrical machinery; construction; simple wiring; theory of magnetic and direct current circuits. Lab fee: $2.00.

115. Direct Current Apparatus and Circuits. (Elec 115 D C Circuits) (0-15) Credit 5. I. Direct current circuit and magnetic circuit theory and calculations; principles of design and construction of direct-current motors and generators, theory, concerning torque, flux, speed, voltage and speed regulations, commutation, and armature reaction of shunt and compound machines, parallel operations, and mechanical couplings of electrical machinery; theory and practice of direct current control equipment for generators and motors. Lab fee: $3.00.

125. Alternating-Current Apparatus and Circuits. (Elec 125 A C Circuits) (0-15) Credit 5. II. Relations of simple harmonic electromotive forces and current phase difference; active, reactive, and apparent power, power factor and reactive factor, resistance, inductance, and capacities; series, parallel, and resonant circuits; polyphase circuits, balanced and unbalanced; construction, characteristics and operation of alternators, induction motors, transformers, synchronous motors, synchronous converters, mercury-arc rectifiers and their regulating control devices; fundamentals of telephone transmission. Prerequisite: Electricity 115. Lab fee: $3.00.

217-227. Electrical Wiring and Illumination. (Elec 217-227 Illumination) (2-15) Credit 7. I, II. Fundamentals of commercial and industrial wiring and illumination practice. Lab fee: $3.00.

232. Direct-Current Motor-Generator Repair. (Elec 232 D C Motor) (0-6) Credit 2. I. Repair of direct-current motors and generators. Lab fee: $2.00.
242. Alternating-Current Motor-Generator Repair. (Elec 242 A C Motor) (0-6) Credit 2. II. Repair of alternating-current motors and generators. Lab fee: $2.00.

ELECTRONICS

113. Electrical Circuits. (Elct 113 Circuits) (1-6) Credit 3. I. Basic principles of electricity, magnetism, conductors, insulators, electron theory,

Ohm's Law, Kirchhoff's Law, characteristics of series and parallel circuits in D.C. and A.C.

134. Basic Electronics I. (Elct 134 Basic I) (2-6) Credit 4. I. Characteristics, parameters, uses of electronics tubes and semiconductors; elementary rectifier, filter, detector, amplifier, oscillator theory.

121. Communication I. (Elct 121 Comm I) (0-3) Credit 1. II. Radiotelegraphy code, FCC rules and regulations, preparation for one of the Radio Amateur licenses.

123. Basic Electronics II. (Elct 123 Basic II) (1-6) Credit 3. II. Basic principles of vacuum tube and semiconductor, A-F and R-F amplifiers, oscillators, delectors; use of voltmeters, current meters, oscilloscopes, signal generators, impedance bridges in analysis of circuits.

144. Radio Receivers. (Elec 144 Radio) (2-6) Credit 4. II. Schematic development, construction, circuit analysis, alignment, testing and trouble-shooting AM & FM receivers. Emphasis on the superhetrodyne receiver, FM demodulators, automatic frequency controls, antenna systems.

211. Communications II. (Elec 211 Comm II) (0-3) Credit 1. I. Continuation of Communication I; Preparation for earning one of the commercial phone licenses. Prerequisite: Electronics 121.

214. Advanced Circuits and Systems. (Elct 214 Adv Circuits) (2-6) Credit 4. I. Theory and laboratory work in wideband, video, pulse and tuned amplifiers; AM & FM transmitters, modulations, antennas; feedback systems; multivibrators; blocking and shock oscillators; wave shaping circuits; sweep circuits; detection, instrumentation and control circuits. Prerequisite; Electronics 144 and concurrent enrollment in Electronics 253.

253. Test Instruments. (Elct 253 Instruments) (3-0) Credit 3. I. Basic Characteristics of laboratory and field type instruments used in electronics; selection, use maintenance, calibration, servicing, and testing.

234. Television. (Elct 234 Television) (2-6) Credit 4. II. Theory and laboratory with television receivers and antenna systems; picture transmission, contrast, definition, distortion, transmission lines, antenna; the tuner, video IF stages, F.M. sound, sync. circuits, AGC, horizontal and vertical sweep circuits, the picture tube.

224. Testing and Servicing. (Elct 224 Servicing) (2-6) Credit 4. II. Use of test instruments under field conditions; trouble-shooting, servicing and repair of commercial radios, televisions and other electronic units; stress upon the economical and efficient use of time, materials and techniques in servicing. Prerequisites: Electronics 144 and 234.

244. Color Television. (Elct 244 Color TV) (2-6) Credit 4. II. Theory and laboratory with color television receivers, NTSC color standards, fundamentals of colorimetry; trouble-shooting, alignment, servicing.

263. Servomechanism and Automation. (Elct 263 Automation) (1-6) Credit 3. I. Application of Electronics to feedback control systems and automatic circuit controls. Analysis and testing for response, stability and accuracy.

303. Electronics Projects. (Elct 303 Projects) (1-6) Credit 3. II. The development of electronic project suitable for instruction in junior and senior high school industrial arts courses. Lab fee: $2.00.

MASONRY

113. Elementary Masonry. (Masn 113 Elementary) (1-6) Credit 3. I. Use, care and value of tools; current materials and methods used in brick masonry; mixing mortar by hand and machine; laying straight walls using the running bond; theory of elementary masonry. Lab fee: $2.00.

123. Elementary Masonry. (Masn 123 Elementary) (1-6) Credit 3. II. Building piers; concrete masonry construction, 4" units; laying bricks in straight walls and corners; theory of blueprint reading and estimating small jobs. Lab Fee: $2.00.

117-127. Elementary Masonry. (Masn 117-127 Elementary) (2-15) Credit 7. I, II. Use, care and value of tools; recent materials and methods used in brick masonry to include concrete masonry construction; mixing mortar by hand and machine; laying bricks to a line, building running bond corners, angles, and walls; brick veenering; theory estimating bricks and blocks. Lab fee: $3.00.

213. Advanced Masonry. (Masn 213 Advanced) (1-6) Credit 3. II. Theory and practice in concrete construction, fire place construction; laying bricks of various bonds; estimating small concrete jobs and masonry work. Lab fee: $2.00.

217-227. Advanced Masonry. (Masn 217-227 Advanced) (2-15) Credit 7. I, II. Fire place and chimney construction; mixing and pouring concrete walks, drives, floors, and slabs; laying tile units; sills, steps and units of various sizes; laying ceramic tile floors and walls; laying irregular units; rocks, stone, and solar tile; theory to include concrete testing and estimating. Lab fee: $3.00.

223. Advanced Masonry (Masn 223 Advanced) (1-6) Credit 3. II. Theory and practice in special construction in brick and concrete construction; laying various size masonry and concrete units; building with rocks, stone and solar tile; ceramic tile construction; estimating large masonry construction. Lab fee: $2.00.

323. Ornamental Concrete. (Masn 323 Ornamental) (1-6) Credit 3. II. Theory and practice of ornamental and decorative work in concrete, moulding, pedestals, columns, pottery, vases, benches and other decorative work. Lab fee: $2.00.

METAL TECHNOLOGY

FOUNDRY

213. Foundry. I. (M A 213 Foundry I) (1-6) Credit 3. I. Processes used in casting non-ferrous alloys, kiln-drying and moisture fired furnaces, moulding and casting non-ferrous metals, foundry layouts. Lab fee: $2.00.

223. Foundry II. (M A 223 Foundry II) (1-6) Credit 3. II. Processes used in casting ferrous alloys; mostly cast iron, cupola practices, sand testing, coremaking; practice in moulding and casting ferrous metals, metallurgy of gray iron. Lab fee: $2.00.

MACHINE SHOP

102-113. Benchwork. (Mach 102-113 Benchwork) (0-6) (1-6) Credit 2-3. I. Units that lay a foundation for further metal work, hand tools, precision measuring instruments, laying out, filing, tool grinding, use of tap and dies, drill press and the use of metals and their cutting speeds. Lab fee: $2.00.

123. Machine Shop. (Mach 123 Machine Shop) (1-6) Credit 3. II. Fundamental operations; chucking, facing, centering, straight and taper turning, plain milling, plain shaping, thread cutting with lathe, counter-sinking, boring and chuck and mandrel work—mostly lathe study. Lab fee: $2.00.

213. Advanced Machine Shop (Mach 213 Machine Shop) (1-6) Credit 3. I. The index head, milling square surfaces, hexagonal surfaces, milling keyways for plain and Woodruff keys, gear cutting, spur and miter gears, cylindrical and surface grinding. Lab fee: $2.00.

223. Toolmaking. (Mach 223 Toolmaking) (1-6) Credit 3. II. Making jig and fixtures and special tooling for quantity production of some mechanical units to be produced in the shop; emphasis on modern precision toolmaking methods. Lab fee: $2.00.

313. Heat Treatment. (Mach 313 Heat) (1-6) Credit 3. I. The heat treatment of ferrous alloys, heat treating operations, microstructure and physical properties, hardenability, grain size testing, machineability and some heat treating operations as applied in industry. Lab fee: $2.00.

343. Material and Processes. (M A 343 Materials) (1-6) Credit 3. II. The limitation and usefulness of materials, techniques of processing; their relative importance industrially and their relation to one another. Lab fee: $2.00.

SHEET METAL

112-122. Sheet Metal. (Ma 112-122 Sheet Metal) (0-6) Credit 2. I, II. Sheet metal as an industry course for School of Arts and Sciences students only. Lab fee: $2.00.

113. Elementary Sheet Metal. (M A 113 Sheet Metal) (1-6) Credit 3. I. Fundamental machine and hand tool operation. Study of materials; development and execution of simple patterns. Lab fee: $2.00.

123. Elementary Sheet Metal. (M A 123 Sheet Metal) (1-6) Credit 3. II. Continuation of Sheet Metal 113 to include direct layouts and short methods. Lab fee: $2.00.

213. Elementary Sheet Metal. (M A 213 Sheet Metal) (1-6) Credit 3. I. Use of templates, soldering, brazing, seaming, drafting of irregular patterns by means of triangulation. Lab fee: $2.00.

223. Intermediate Sheet Metal. (M A 223 Sheet Metal) (1-6) Credit 3. II. Continuation of Sheet Metal 213, including advanced problems. Lab fee: $2.00.

313. Industrial Arts Sheet Metal. (M A 313 Sheet Metal) (1-6) Credit 3. I. Advanced operations such as raising, forming, stretching, shrinking, bending, spinning, chasing, seaming, piercing, etching, coloring; applied in projects in the working of copper, brass, aluminum, and other materials used in the industrial arts shop. Lab fee: $2.00.

PAINTING

112-122. Elementary Painting. (Pnt 112-122 Elementary) (0-6) Credit 2. I, II. Elementary painting as an industry course for students in the School of Arts and Sciences. Lab fee: $2.00.

113. Elementary Painting. (Pnt 113 Elementary) (1-6) Credit 3. I. Various kinds of paints, varnishes, stains, lacquers, and their ingredients; the relation and recognition of color; tools, equipment and their uses; practical experience. Lab fee: $2.00.

117. Elementary Painting. (Pnt 117 Elementary) (2-15) Credit 7. I. Various kinds of paints, varnishes, stains, lacquers, and their ingredients; the relation and recognition of colors; tools, equipment and their uses; practical experience. Lab fee: $3.00.

123. Elementary Painting. (Pnt 123 Elementary) (1-6) Credit 3. II. Preparation for exterior surfaces; mixing and applying paints; the effect of weather conditions upon a paint job; color analysis and color matching; practical experience. Lab fee: $2.00.

127. Elementary Painting. (Pnt 127 Elementary) (2-15) Credit 7. II. Preparation of exterior surfaces; mixing and applying paints; the effect of weather conditions upon a paint job; color analysis and color matching; practical experience. Lab fee: $3.00.

213. Furniture Finishing. (Pnt 213 Furniture) (1-6) Credit 3. I. Knowledge of woods used in furniture building; use of stains, fillers, shellac and varnish and oils; producing natural stain, varnish and oil finishings. Lab fee: $2.00.

217. Advanced Painting. (Pnt 217 Advanced) (2-15) Credit 7. I. Preparing interior surfaces; blending colors with furniture; effects of position and light upon interiors; modernistic wall finishing; practical experiences. Lab fee: $3.00.

202-223. Upholstering. (Pnt 202-223 Upholstering) (1-6) Credit 2-3. II. Knowledge of tools and materials for upholstering, reupholstering simple pad back and cushion chairs; resetting springs in overstuffed furniture; use of webbing and pad and platform cloth. Lab fee: $2.00.

227. Advanced Painting. (Pnt 227 Advanced) (2-15) Credit 7. II. Simple steps in paper hanging; shop management and furniture finishing; estimating and practical experience. Lab fee: $3.00.

343. Advanced Furniture Finishing. (Pnt 343 Furniture) (1-6) Credit 3. I. Producing natural finishes with shellac, varnish and lacquer; graining and enameling; polishing and striping. Lab fee: $2.00.

423. Advanced Upholstery. (Pnt 243 Upholstering) (1-6) Credit 3. II. best methods of estimating materials; reupholstering overstuffed chairs and sofas; reupholstering curved backs; slip covering. Lab fee: $2.00.

PLUMBING

113. Elementary Plumbing. (Plmb 113 Elementary) (1-6) Credit 3. I. Theory and practice in measuring, cutting and threading steel pipe; cutting and caulking cast iron pipe; repairing faucets and cocks; soldering, grading, and laying sewer lines. Lab fee: $2.00.

117. Industrial and Elementary Plumbing. (Plmb 117 Industrial) (2-15) Credit 7. I. Care and use of tools; plumbing and heating layouts; measuring, cutting and threading steel pipe; cutting and caulking cast iron pipe; repairing faucets and cocks; soldering, grading, and laying sewer lines. Lab fee: $3.00.

123. Elementary Plumbing. (Plmb 123 Elementary) (1-6) Credit 3. II. Theory and Practice in leadwork and gas pipe work. Lab fee: $2.00.

127. Industrial and Elementary Plumbing. (Plmb 127 Industrial) (2-15) Credit 7. II. Leadwork, roughing in for, and setting fixtures on small plumbing and heating jobs; material bills, tapping and venting. Lab fee: $3.00.

217-227. Advanced Plumbing. (Plmb 217-227 Advanced) (2-15) Credit 7. I and II. Small heating systems; installation of boilers of one and two-pipe heating systems; transmission lines, layouts, laying and codes, etc. Making estimates for labor and material for small plumbing and heating jobs; distribution of hot and cold water; estimating yearly supplies for boarding schools. Lab fee: $3.00.

313. Advanced Plumbing. (Plmb 313 Advanced) (1-6) Credit 3. I. Theory and practice of small heating systems to include boiler work for house and small commercial uses Lab fee: $2.00.

323. Advanced Plumbing. (Plmb 323 Advanced) (1-6) Credit 3. Theory and practice in advanced problems of hot and cold water distribution; heaters and other plumbing features in homes and commercial businesses. Lab fee: $2.00.

PRINTING

102-202. Printing. (Prnt 102-202 Printing) (0-6) Credit 2. 1, II. Printing as an industry course for Arts and Sciences students only. Lab fee: $2.00.

112. Typography I. (Prnt 112 Typography) (0-6) Credit 2. I. Hand composition; basic problems and techniques in setting type; setting of straight matter and simple display jobs; proofing; care of type and material. Lab fee: $2.00.

113. Graphic Arts Survey. (Prnt 113 Graphic Art) (3-0) Credit 3. I. The history of printing; general survey of allied processes, methods and practices followed.

124. Typography II. (Prnt 124 Typography) (2-6) Credit 4. II. Advanced problems in composition and selection of type; proportion, balance, shape, harmony, contrast, color; designing of letters, folders, broadsides, brochures, etc., their function and solving problems involved in their production. Lab fee: $2.00.

133. Layout, Design, and Lettering. (Prnt 133 Layout) Credit 3. I. Skill development in drawing letters for layouts and reproduction purposes, fundamentals of design, incorporating "thumbnail," "rough," space break-up, movement, balance, type legibility, and copyfitting.

152. Platen Presswork I. (Prnt 152 Platen Press) (0-6) Credit 2. I. Operation of the platen press; feeding and simple make-ready. Lab fee: $2.00.

162-163. Clyinder Presswork. (Prnt 162-163 Cylinder) (0-6) (0-9) Credit 2, 3. II. Operation and care of small cylinder presses; the make-ready and feeding of commercial job forms. Lab fee: $2.00.

172-173. Platen Presswork. (Prnt 172-173 Platen Press) (0-9) Credit 2, 3. II. Advanced make-ready on half-tones and more intricate work; introduction to automatic platen presses. Lab fee: $2.00.

182. Machine Composition. (Prnt 182 Composition) (0-6) Credit 2. II. Elementary phases of linotype operation; keyboard fingering, and practice in setting from simple copy. Lab fee: $2.00.

211. Bindery Operation. (Prnt 211 Bindery) (3-0) Credit 1. I. Folding insering, gathering, stitching, gluing on backs, and trimming; proper methods of wrapping. Lab fee: $2.00.

212. Estimating. (Prnt 212 Estimating) (2-0) Credit 2. II. Application of the elements of cost-finding to jobs of printing in process.

222. Typography IV. (Prnt 223 Typography) (0-6) Credit 2. II. Craftsmanship and efficiency in handling typical jobs; creative and experimental typography. Lab fee: $2.00.

234. Typography III. (Prnt 234 Typography) (2-6) Credit 4. II. Trade practice in handling typical jobs, training in application of principles in experimental typography; working up of different kinds of type and combination form; imposition and lockup beginning with single forms. Lab fee: $2.00.

243. Plant Management. (Prnt 243 Management) (3-0) Credit 3. II. Solution of problems of finance, profits, plant layout, equipment, operation, and employee relations.

251-253. Cylinder Presswork. (Prnt 252-253 Cylinder) (0-6) (0-9) Credit 2, 3. I. Advanced Presswork, make ready and feeding, including newspaper and book work; press mechanism and adjustments. Introduction to simple color work.

262-263. Cylinder Presswork. (Prnt 262-263 Cylinder) (0-6) (0-9) Credit 2, 3. II. Operation and care of large cylinder presses; make-ready of halftone and process color work.

272-273. Machine Composition. (Prnt 272-273 Composition) (0-6) (0-9) Credit 2, 3. I. Accuracy, development of speed, correct handling of straight matter, simple tabular work, and moderately complex composition.

282-283. Machine Composition. (Prnt 282-283 Composition) (0-6) (0-9) Credit 2, 3. II. The development of trade accuracy and speed; understanding and practice of accepted typographic usage; setting for color separation, headings, display and advertising matter; twin-matter composition; work in the routine care of machines.

292-294. Printing Production. (Prnt 292-294 Production) (0-6) (2-6) Credit, 2, 4. II. Planning, estimating, scheduling and complete manufacture of printing jobs.

SHOEMAKING AND LEATHERWORK

112-122. Shoemaking. (Shoe 112-122 Shoemaking) (0-6) Credit 2. I and II. Shoemaking as an industry course for students in the School of Arts and Sciences only. Lab fee: $2.00.

117. Shoemaking. (Shoe 117 Shoemaking) (2-15) Credit 7. I. Care of shop; care and use of tools; making bristled waxed thread ends; sewing with hand sewing awl; tempering shoe leather; moulding whole and half soles for bottom use; fitting half soles; sewing rips in uppers and soles by hand. Lab fee: $3.00.

127. Shoemaking. (Shoe 127 Shoemaking) (2-15) Credit 7. I. Selection of lasts to correct the shape of shoes to be repaired; nailing shoes previously fitted; repairing leather and wood heels; lock stitching; trimming edges by hand; classification on soles and upper patch leather; fitting needles and the repair of the universal feed machine; getting outlines of vamp; quarter and sole patches; putting on cement; vamp and sole patches; sewing soles by the hand method. Lab fee: $3.00.

217. Shoemaking. (Shoe 217 Shoemaking) (2-15) Credit 7. I. The care of the finishing machine; fitting and preparing cement soles; repairing light half soles on shoes; history of footwear; fitting insoles; repairing turn soles by the turn method; sewing welts; putting on plain bottoms; stitching soles with machine and trimming and finishing edges with machine. Lab fee: $3.00.

227. Shoemaking. (Shoe 227 Shoemaking) (2-15) Credit 7. II. The use and care of the McKay Self-channeling Machine; fitting needles in the machine; general repairs to machine; the use and care of the rough rounding machine; the lip channel method of fastening whole sole with the stitches; general organization and shop management; keeping books and job records. Lab fee: $3.00.

TAILORING

112-122. Tailoring. (Tail 112-122 Tailoring) (0-6) Credit 2. I and II. Tailoring as an industry for students in the School of Arts and Sciences only. Lab fee: $2.00.

113. Elementary Tailoring. (Tail 113 Elementary) (0-9) Credit 3. I. Names and uses of various stitches; trouser cutting and making; the tailor's square and its uses; trouser measurements. Lab fee: $2.00.

117. Elementary Tailoring. (Tail 117 Elementary) (2-15) Credit 7. I. Names and uses of various stitches; trouser cutting and measurements; the tailor's square and its uses. Lab fee: $3.00.

123. Elementary Tailoring. (Tail 123 Elementary) (0-9) Credit 3. I. Use and care of tailoring machines; skirt drafting, cutting and making. Lab fee: $2.00.

127. Elementary Tailoring. (Tail 127 Elementary) (2-15) Credit 7. I. Trouser drafting, trimming and making; serges and worsteds; use and care of tailoring machines; skirt drafting, cutting and making. Lab fee: $3.00.

213. Tailoring. (Tail 213 Tailoring) (0-9) Credit 3. II. Proportionate vest cutting, drafting and making; collar and canvas construction. Lab fee: $2.00.

215. Advanced Tailoring. (Tail 215 Advanced) (0-15) Credit 5. Coat and vest measurement; direct and proportionate vest cutting, drafting and making; collar and canvas construction. Lab fee: $3.00.

223. Tailoring. (Tail 223 Tailoring) (0-9) Credit 3. II. Sack coat cutting, trimming and making. Lab fee: $2.00.

225. Advanced Tailoring. (Tail 225 Advanced) (0-15) Credit 5. II. Coat cutting, trimmed, drafting, and making; alterations and repairs; hand and machine made coats; methods of lining and relining. Lab fee: $3.00.

313. Tailoring. (Tail 313 Tailoring) (0-9) Credit 3. II. Tuxedo and full-dress coat cutting, trimming and making. Lab fee: $2.00.

323. Tailoring. (Tail 323 Tailoring) (0-9) Credit 3. II. Alterations and repairs to garments worn by women and men; methods of lining and relining. Lab fee: $2.00.

WELDING

102-103. General Welding. (Weld 102-103 General) (1-3) (1-6) Credit 2-3. I and II. An exploration of the welding field. An introduction to the fundamentals of oxyacetylene, electric arc and resistance welding, including cutting. Lab fee: $2.00.

113. Welding I—Electric. (Weld 113 Electric) (1-6) Credit 3. I and II. Theory and practice of techniques in arc welding maintenance and fabrication; servicing of equipment and controls; a study of welding symbols. Lab fee: $2.00.

123. Welding II—Gas. (Weld 123 Gas) (1-6) Credit 3. I and II. Theory and practice of techniques in gas welding fabrication and maintenance; shortage and manufacture of gas; servicing and regulation of equipment. Lab fee: $2.00.

213. Advanced Welding I—Electric. (Weld 213 Adv Electric) (1-6) Credit 3. I and II. Further practice in arc welding; a study of some of the modern techniques in welding; types of tests used in the testing of welded joints; calculating costs, job rating and design; and industrial application of resistance welding. Lab fee: $2.00.

223. Advanced Welding II—Gas. (Weld 223 Adv Gas) (1-6) Credit 3. I and II. Modern techniques of gas welding; methods of fusion and bronze welding, cast iron and methods of welding non-ferrous metals. Lab fee: $2.00.

WOODWORK

112-122. General Woodwork. (Wdwk 112-122 General) (0-6) Credit 2. I, II. An exploration of the woodwork field and a study of its related socio-economic problems; development of an appreciation for wood and its aesthetic qualities; the construction of general small projects using correct tools, materials and operational procedures. (For students of School of Arts and Sciences only.) Lab fee: $2.00.

113-123. Fundamental Woodwork. (Wdwk 113 123 Fundamental) (1-6) Credit 3. I, II. Care, use, and selection of fundamental woodworking tools, materials and equipment; skill in hand construction of approved projects which must embody good construction and good design values; training in ability to analyze a problem into its learning units and to plan procedure in execution of a job. Lab fee: $2.00.

121. Maintenance of Shop Equipment. (Wdwk 121 Maintenance) (0-3). Credit 1. I, II. The care and upkeep of shop tools and equipment; gumming, milling, jointing, sharpening of circular saws, setting and filing handsaws, brazing, band saws, sharpening jointer knives. Lab fee: $2.00.

214. Cabinetmaking. (Wdwk 214 Cabinetmaking) (2-6) Credit 4. I. Introduction to woodworking machines through their uses and care; construction of small pieces of period furniture embodying good design and specific units of instruction. Prerequisite: Fundamental woodworking, freehand drawing. Lab fee: $3.00.

223. Wood Technology. (Wdwk 223 Technology) (3-0) Credit 3. II. Structures and properties of woods; characteristics and distribution of common species; lumbering, saw-milling, kilning, grading, measurements, markets.

314. Machine Woodworking. (Wdwk 314 Machine) (2-6) Credit 4. I. Production methods in use of power machines. Practical experience with techniques of modern mass production. Prerequisite: Woodwork 113-214. Lab fee: $3.00.

322. Patternmaking. (Wdwk 322 Patternmaking) (0-6) Credit 2. I. Care and use of bench and machine tools used in pattern making, materials used in making patterns; meaning, use and construction of pattern to illustrate principles of draft, shrinkage, finish, warp, and core prints. Lab fee: $2.00.

323. Wood Turning. (Wdwk 323 Wood Turning) (1-6) Credit 3. II. Proper care and use of the lathe and lathe tools; the principles of cutting and scraping; the making of projects with emphasis on good design. Prerequisite: Woodworking 214. Lab fee: $2.00.

414. Furniture and Cabinetmaking. (Wdwk 414 Furniture) (2-6) Credit 4. I. Advanced course with emphasis on art and design in furniture construction; construction of period and modern style furniture. Lab fee: $3.00.

School of Nursing

The School of Nursing offers a curriculum leading to the degree of Bachelor of Science in Nursing. Upon satisfactory completion of all of the requirements of the School of Nursing, the student is eligible to write the State Board Examination given by the Board of Nurse Examiners for the State of Texas.

OBJECTIVES

1. Develop in each student the attitude, knowledge and skills to function effectively in a first level position, such as staff nurse, with the foundation for continuous professional advancement and additional academic preparation.
2. Develop knowledge of scientific principles as related to the curriculum and their application in meeting individual patient needs.
3. Develop an understanding of individual and group cultural differences and their responses to health needs and problems.
4. Develop an understanding and appreciation of existing resources on a local, state, national and international level for meeting health needs.
5. Prepare the student to assume an active role in the social, economic, and political life of the community, state and nation.

REQUIREMENTS FOR ADMISSION

Applicants to the School of Nursing must meet the admission requirements of the College.

GRADE AVERAGES

Students are expected to maintain a "C" average or better each semester.

POLICIES

Policies pertaining to academic performance in the nursing area:

1. Any student who makes a "D" in a major nursing course will be required to withdraw from the School of Nursing and apply for readmission at such time when the course is offered again.
2. Any student who makes a grade of "F" in a major nursing course will be required to withdraw from the School of Nursing.

ACCREDITATION

The School of Nursing is accredited by the Board of Nurse Examiners for the State of Texas.

Program in Nursing

FIRST YEAR

First Semester	*Hrs.*	*Second Semester*	*Hrs.*
English 113	3	English 123	3
Freshman Composition		Freshman Composition	
Biology 115	5	Biology 125	5
General Zoology		General Zoology	
Chemistry 114	4	Chemistry 124	4
General Inorganic Chemistry		General Inorganic Chemistry	
Physical Education 111 W	1	Physical Education 121 W	1
Freshman Practice		Freshman Practice	
Spanish 113	3	Spanish 123	3
Elementary Spanish		Elementary Spanish	
	16		16

SUMMER

First Semester	*Hrs.*	*Second Semester*	*Hrs.*
English 215 Public Speaking	3	English 223 Introduction to Literature	3
Psychology 113 General Psychology	3	Sociology 263 General Sociology	3
	6		6

SECOND YEAR

Biology 314 Human Anatomy and Physiology	4	Biology 324 Human Anatomy and Physiology	4
Biology 334 General Microbiology	4	Foods 113 Elementary Nutrition	3
Nursing Education 216 Fundamentals of Nursing	6	Nursing Education 228 Medical-Surgical Nursing I	8
Nursing Education 212 History of Nursing	6		15
	16		

SUMMER

History 173 American History	3	History 183 American History	3
Political Science 113 American National Government	3	Political Science 123 American State and Local Government	3
	6		6

THIRD YEAR

Nursing Education 310 Maternal and Child Health	10	Nursing Education 310 Maternal and Child Health	10
Nursing Education 318 Medical-Surgical Nursing II	8	Nursing Education 318 Medical-Surgical Nursing II	8
Education 343 Human Development and Learning	3	Education 343 Human Development and Learning	3
Sociology 303 The Family	3	Sociology 303 The Family	3
Psychology 443 Psychology of Personality	3	Psychology 443 Psychology of Personality	3
Philosophy 313 Introduction to Philosophy	3	Philosophy 313 Introduction to Philosophy	3
Sociology 403 Introduction to Social Case Work	3	Sociology 403 Introduction to Social Case Work	3
	16 - 17		16 - 17

FOURTH YEAR

Nursing Education 453 Introduction to Research in Nursing	3	Nursing Education 433 Public Health Nursing	3
Nursing Education 423 Seminar in Nursing	3	Nursing Education 444 Public Health Field	4
Nursing Education 418 Medical-Surgical Nursing III	8	Nursing Education 449 Psychiatric Nursing	9
Nursing Education 403 Public Health Administration	3		16
	17		

DESCRIPTION OF COURSES

212. History of Nursing. (N E 212 History) (2-0) Credit 2. Historical development of nursing up to the present; the development and changing emphasis in modern nursing.

216. Fundamentals of Nursing. (N E 216 Fundamentals) (2-4) Credit 6. Lectures, two hours; Laboratory, sixteen hours. Concurrent course 212. An introduction to basic principles of nursing care, communicative techniques, use of community agencies and rehabilitation.

228. Medical and Surgical Nursing. (N E 228 Med-Surg I) (4-4) Credit 8. Lectures, four hours; Laboratory, sixteen hours. Prerequisites: Courses 212 and 216. Application of scientific and nursing principles in the care of patients with selected medical-surgical conditions. Emphasis is placed on principles of biological, physical and social sciences used in preventive and thera-

STUDENT NURSES in "action" training shot.

peutic nursing care. Legal aspects and medical sciences of pharmacology, diet therapy, rehabilitation are integrated; clinical laboratory experience includes medical and surgical units and operating room.

310. Maternal and Child Nursing. (N E 310 Maternal) (6-4) Credit 10. Lectures, six hours; Laboratory, sixteen hours. Prerequisites: Courses N.E. 212, 216, 228. Emphasis placed on viewing maternal and child health on a continuum, which includes comprehensive nursing care during the entire maternity cycle and in conditions and illnesses of children. Learning experiences provided through clinical laboratory, educational tours, audio-visual materials, demonstrations and class discussions.

318. Medical and Surgical Nursing II. (N E 318 Med-Surg II) (4-4) Credit 8. Lectures four hours; Laboratory, sixteen hours. Prerequisites: Courses 212, 216 and 228. Continuous application of scientific and nursing principles in the more complex medical surgical conditions.

418. Medical and Surgical Nursing III. (N E 418 Med-Surg III) (4-4) Credit 8. Lectures, four hours; Laboratory, sixteen hours. Pre-requisites: Courses 212, 216, 228 and 318. An introduction to elements of management with emphasis on supervisory, teaching and team leader function in giving nursing care. Interpersonal relationships are stressed. Clinical laboratory experience includes compresensive nursing care.

403. Public Health Administration. (N E 403 Publ Hlth Adm) (3-0) Credit 3. Lectures, discussions. Basic Principles of Administration as they apply to international, national, state and local health agencies. Environmental sanitation and the epideomological approach to disease control will be studied.

423. Seminar in Nursing. (N E 423 Seminar) (3-0) Credit 3. Exploration and discussions of current trends and problems as they relate to nursing and nursing practices.

433. Public Health Nursing. (N E 433 Publ Hlth Nur) (3-0) Credit 3. Lectures, discussions, demonstrations and special field trips. A generalized public health nursing program utilizing local and state agencies whereby students are provided an opportunity through carefully planned and supervised observations and participation to apply principles and skills to actual situations.

444. Public Health Nursing Field Experience. (N E 444 Publ Hlth Exp) (0-16) Credit 4. Concurrent with N.E. 433. Lectures, discussions, demonstrations and conferences. Selected public health nursing field experience to be provided during a nine week period. Planned visits to administer comprehensive family centered nursing care in the home and health guidance. Visits to local and state agencies for program interpretation. Maternal and Well Child Conference experiences at Prairie View A. and M. College Health Unit.

453. Introduction to Research in Nursing. (N E 453 Research) (3-0) Credit 3. A critical analysis of nursing situations with emphasis on principles and techniques of problem-solving approach.

449. Psychiatric Nursing. (N E 449 Psychiatric) (3-6) Credit 9. Lectures, three hours; laboratory, twenty-four hours. Focuses on the dynamics of human behavior and its relationship to mental illness. Emphasis is placed on communicative skills, interpersonal relations, therapeutic environment and preventive aspects of psychiatry and psychiatric nursing.

CLINICAL RESOURCES

Ben Taub General Hospital
Houston, Texas
Jefferson Davis Hospital
Houston, Texas
Lackland Air Force Base Hospital
San Antonio, Texas
Veterans Administration Hospital
Houston, Texas

Department of Military Science

GENERAL INFORMATION

The Military Science Department curriculum provides male students with an opportunity to gain a better insight into the roles, missions, and operations of our nation's Armed Forces. As the Reserve Forces Act of 1955, as amended in 1963, gives every young man in the United States a minimum six-year military obligation, an opportunity is also afforded for young men of this college to qualify to serve this obligation as officers, while they are pursuing their normal college studies toward academic degrees concurrently.

Under provisions of the National Defense Acts of 1916 and 1920, as amended, a Senior Division Army Reserve Officers' Training Corps (ROTC) unit has been established and maintained at this college since September 1942. The Department of Army assigns a staff of U.S. Army personnel from the Active establishment to administer the ROTC program and give instruction in prescribed military subjects.

Development of qualities of leadership in college trained men, who by their education and inherent qualities are suitable for continued development as commissioned officers in the United States Army, is the principal objective of the ROTC program. The General Military Science curriculum is in effect at this institution. The course of instruction under this curriculum covers fundamental military subjects common to all branches of the Army. Its aim is to provide a military education which, in conjunction with other college disciplines, will develop individual character and personal qualities essential to an officer. It also helps to develop those individual leadership and organizational abilities which can help a student achieve future progress and success in his chosen career, as well as afford additional citizenship training for all students participating in the program.

COURSE OF INSTRUCTION

The four-year course of instruction is divided into two phases, the Basic phase covers a period of two regular academic years. A total of 180 classroom and laboratory hours of instruction is given during the two year period of the Basic Course, 90 hours in each year. During the last two years of the program, not less than 150 hours of instruction is given in each year of the Advanced Course.

ROTC SCHOLARSHIPS

On 13 October 1964, the President of the United States signed into law the new ROTC bill which has as its purpose the vitalization of the Armed Services Reserve Officers' Training programs. One of the provisions of this bill provides four-year scholarships to outstanding high school graduates, and two-year scholarships to those presently enrolled in college. Scholarship assistance includes $50.00 a month pay, payment of tuition, fees, books and laboratory expenses. To be eligible for the scholarship program, a student must:

a. Be a citizen of the United States

b. Be specially selected for the scholarship program under procedures prescribed by the Department of the Army.

c. Enlist in a Reserve Component as a cadet for a period prescribed by the Department of the Army.

d. Contract, with the consent of his parents or guardian if he is under 21 years of age, with the Army to serve for a period required by the program.

e. Agree to accept a commission if offered.

f. Agree to serve on active duty as a commissioned officer for four years.

REQUIREMENTS FOR ENROLLMENT

The Basic Military Science Course must be completed successfully by all physically qualified undergraduate male students as a requirement for graduation from the college. Several categories of students are exempted from all or

part of this requirement. However, students in the exempted categories who desire to participate in the ROTC program may be permitted to enroll under certain special conditions. Categories of exemption are as follows:

a. Former members of US Armed Forces who have served on active military duty for four continuous months or more.

b. Students who will reach their 28th birthday prior to qualifying for appointment as Second Lieutenants.

c. In some cases, students who are members of US Armed Forces Reserve components.

d. Students who enter the college with advanced standing as second semester sophomores or higher.

e. Students who are not pursuing a course load of at least fourteen semester hours, unless specifically approved by the Dean of Instruction.

Enrollment in the Advanced Military Science Course is voluntary, and is generally limited to students who complete the Basic Course successfully and to veterans of US Armed Forces who were honorably discharged after one or more years of military service. Students admitted to the Advanced Course are selected by the Professor of Military Sciences, with the concurrence of the College President. In addition, to qualify for selection for Advanced Course enrollment, the student must:

a. Be selected under procedures prescribed by the Secretary of the Army.

b. Enlist in a Reserve Component for a period prescribed by the Secretary. These students will be called to active duty in their enlisted status only when they have refused to accept a commission or, in circumstances clearly indicating a willful breach of agreement.

c. Contract, with the consent of his parents or guardian if he is under 21 years of age.

d. Agree to accept a commission if offered and serve on active duty for a period prescribed by law, normally 2 years.

e. Successfully complete the first 2 years of the four-year program unless constructive credit is given; or successfully complete basic summer camp of at least 6 weeks duration as a preliminary requirement for admission to the advanced course.

DEFERMENT

Students enrolled in the ROTC program who have completed one or more semester of military science and college courses may be granted deferment from induction for military service under the Universal Military Training Act of 1951. Demonstrated leadership potential, as evaluated through personal conduct and scholastic achievement, is the principal criterion used in granting deferments. Before the deferment is granted, the student must execute a written agreement to continue enrollment in the ROTC program. The deferment, when granted, shall be in force only as long as the student meets academic, military, and general conduct standards, and until completion or termination of his military science course of instruction.

UNIFORMS, TEXTBOOKS and MONETARY ALLOWANCES

Seasonal uniforms and textbooks and/or subject reference publications are furnished each student enrolled in the ROTC program for their use at the college in required ROTC training activities. These are issued without cost to the student, but remain the property of the US Government and must be returned by the student at the close of the regular school session. Each student is responsible for the safeguard and proper maintenance of this property, and will be required to reimburse the Government for any item of this property which is lost, damaged, or destroyed while in his possession.

Students who are formally enrolled in the Advanced Course receive a monthly monetary allowance which is known as retainer pay. This allowance is paid at the rate prescribed by the Secretary of Army. Currently the pay rate is $40.00 per month. For the ROTC summer camp period, the student is paid at the rate of $120.00 per month, plus travel costs from his home to and

from the summer camp site. Uniforms, meals, and medical care are provided the student by the Government during his attendance at ROTC summer camp. The total monetary allowance a student may realize while enrolled in the Advanced Course is over $1,000.00. An additional $300.00 is paid to each commissioned officer as a clothing allowance upon his initial active duty tour.

ROTC SUMMER CAMP TRAINING

ROTC summer camp training is designed to provide the ROTC student with practical experience and instruction in tactical, technical, and administrative subjects with specific emphasis on the duties and skills normally required of a Second Lieutenant. This training serves to supplement institutional instruction by providing students with applicatory type training which cannot be presented adequately at the institution.

Each Advanced Course ROTC student is required to attend an appropriate ROTC summer camp. The prescribed time of attendance is during the summer immediately following completion of the first year of the Advanced Course. Postponement of the time of attendance is authorized only under exceptional circumstances; which requires approval by the Army Commander, based on the recommendation of the Professor of Military Science.

COURSES OFFERED IN GENERAL MILITARY SCIENCE

Military Science I

112, 122. (MS 112, 122 Elem Mil Sci) (2-2) Credit 2. I and II. Organization of the Army and ROTC; Individual Weapons and Marksmanship; United States Army and National Security; General Military Subjects (prescribed by the PMS); Leadership Laboratory.

Military Science II

212, 222. (MS 212, 222 Elem Mil Sci) (2-2) Credit 2. I and II. American Military History; Counterinsurgency; Map and Aerial Photograph Reading; Introduction to Operations and Basic Tactics; Leadership Laboratory.

Military Science III

312 (5)*, 324. (MS 312 (5)*, 324 Adv Mil Sci) (4-2) Credit 4 (5)*. I and II. Leadership; Military Teaching Principles; Counterinsurgency; Branches of the Army; Small Unit Tactics and Communications; Leadership Laboratory; Pre-Camp Orientation; Elective Academic Subject.

Military Science IV

414, 422 (5)*. (MS 414, 422 (5)* Adv Mil Sci) (4-2) Credit 4 (5)*. I and II. Operations Logistics; Army Administration; Military Law; The Role of the US in World Affairs; Map Reading; Service Orientation; Leadership Laboratory; Elective Academic Subject.

(*Includes credit for elective academic course during one semester in the following academic fields: Effective Communication; General Psychology; Political Development and Political Institutions; and Science Comprehension)

Department of Extramural Services

EXTENSION SCHOOLS AND IN-SERVICE EDUCATION

In an effort to serve the citizens of Texas at the point of their greatest needs, Prairie View A. and M. College extends its in-service teacher education program to various centers in the state where a sufficient number of teachers show interest in professional growth. It is necessary that a request for an Extension Center be approved by the county and city superintendents before its organization and operation. The classes are designed primarily to meet the needs of in-service teachers on the graduate level, but this does not preclude enrollment of other qualified professional or non-professional persons. It is possible for a full-time teacher to earn 9 semester hours per school year in off-campus Extension Centers. The entrance requirements are the same as those for resident students.

ON-CAMPUS SATURDAY CLASSES

Prairie View has extended its services to in-service teachers who wish to earn resident credit toward a higher degree by offering Saturday classes on the graduate level. These classes are designed to offer interested persons an opportunity for professional development as well as earn resident credit leading to the Master's Degree. Classes are offered in the following fields of study: Elementary Education, Administration, Supervision and additional fields when requested. Persons interested in enrolling are asked to contact the Director of Extramural Services for further information.

TEXAS INTERSCHOLASTIC LEAGUE OF COLORED SCHOOLS

The College sponsors and administers the Interscholastic League Program as a public school service.

The purpose of the League is to promote inter-school contests between member schools as an aid in the training of public school pupils for worthy citizenship.

Organized in 1921, Prairie View has sponsored this program for a period of more than thirty-five years.

The League is organized annually and operated under the auspices of a State Executive Committee comprising a Director and ten members of the college faculty.

Practically all of the high schools and more than fifty per cent of the elementary schools participate annually in a part or all of the contest which include athletics, literary and music events.

TEACHER PLACEMENT SERVICE

The Placement Bureau in Room 201, Spence Hall (Old Agricultural Building), assists graduating seniors and alumni in securing positions for which they are qualified. It assists with follow-up and counselling services and arranges interviews between prospective employees and employers.

The Placement Bureau maintains permanent personnel records, including ratings and recommendations of the graduates. These records serve as a source of information such as is frequently requested by employers. Transcripts, of course completed, background information, work experience, faculty recommendations, photographs and other pertinent information is compiled and sent to prospective employers at the request of the graduate, faculty member or employer.

The Placement Bureau is maintained and operated for the purpose of assisting ex-students and graduates in securing employment. It is also a free public service functioning as an aid to employers in securing qualified workers.

Graduating seniors and alumni should register with the bureau.

The service is FREE.

A TYPICAL SCENE OF THE MANY ACTIVITIES sponsored by the Extramural Services of the College is this picture of the Ninth Annual Business Clinic held in March 1962 under the auspices of the College's Business Administration Department.

School of Graduate Study

ADMINISTRATIVE OFFICERS

EDWARD B. EVANS, V.M.D.; ScD., President of the College
JESSE M. DREW, Ed.D., Dean of Instruction, Dean of Graduate Shcool
THOMAS P. DOOLEY, Ph.D., Dean of School of Arts and Sciences
CLAUDE L. WILSON, M.E., M.S., Dean of School of Engineering
GEORGE L. SMITH, M.S., D.Ed. (Honoris Causa), Dean of School of Agriculture
MISS FLOSSIE M. BYRD, Ph.D., Dean of School of Home Economics
ALVIN I. THOMAS, Ph.D., Dean of School of Industrial Education and Technology
MRS. ROSE E. HYNES, M.S., Dean of School of Nursing
JONEL L. BROWN, Ph.D.; L.L.D., Director of Extramural Services
THOMAS R. SOLOMON, Ph.D., Director of Student Life
HARRY E. FULLER, Dean of Men
MRS. R. L. BLAND EVANS, M.S., Dean of Women
ARTHUR N. FEARING, B.A., Lieutenant Colonel, Infantry, U. S. A., PMS and Commandant, Reserve Officers Training Corps
GEORGE R. RAGLAND, Ph.D., Acting Registrar
ORESTES J. BAKER, M.L.S., Librarian
HORACE D. MURDOCK, M.B.A., Business Manager
A. E. ADAMS, B.S., Acting State Leader, Extension Service for Negroes

COMMITTEE ON GRADUATE STUDY

JESSE M. DREW, Chairman.....Dean of Instruction
JONEL L. BROWN.....Head of Department of Economics
THOMAS P. DOOLEY.....Dean of School of Arts and Sciences
JACK W. ECHOLS.....Head of Department of Education
FLOSSIE M. BYRD.....Dean of School of Home Economics
EARL M. LEWIS.....Head of Department of Political Science
ERNEST M. NORRIS.....Professor of Agricultural Education
ANNE C. PRESTON.....Professor of Elementary Education
ALVIN I. THOMAS.....Dean of School of Industrial Education
GEORGE L. SMITH.....Dean of School of Agriculture
CLAUDE L. WILSON.....Dean of School of Engineering
GEORGE R. RAGLAND.....Acting Registrar

ADMINISTRATION

The Graduate School is composed of the schools and departments which offer graduate instruction leading to the Master's degree, and its faculty is composed of the members of these schools and departments which offer graduate instruction.

The Committee on Graduate Study formulates graduate policies. The Chairman of this Committee is responsible for the Administration of the regulations and requirements for advanced degrees.

ADMISSION TO THE GRADUATE SCHOOL

Applicants for admission to the Graduate School should submit a regular application blank properly executed at least thirty days prior to the opening of the season in which they wish to register. This is to be accompanied by an official transcript of undergraduate work completed.

Students are admitted by the Committee on Graduate Study, acting through the Chairman, to whom application should be made. For admission to the School of Graduate Study an applicant must have received his baccalaureate degree from a senior college of recognized standing.

Graduates of such institutions who have met the prerequisite requirements of the departments or schools in which they wish to major are custom-

arily accepted as graduate students in good standing if they graduated in the upper 50 per cent of their class while carrying an undergraduate program with a normal distribution of courses. All cases are considered on an individual basis. This includes a study of the courses taken and the grades made. Applicants for admission should have a minimum of C+ (2.5 on a scale A equal to 4) grade point average over the entire undergraduate program.

Students not eligible to admission in full standing as prospective candidates on probation or as Graduate Special students may be permitted to take individual courses with the approval of the instructors concerned.

GRADUATE WORK BY SENIORS

A senior in this College who lacks six semester hours or less of having completed the requirements for the undergraduate degree may, with the approval of his undergraduate dean, and the Chairman of the Committee on Graduate Study, register for graduate courses, not to exceed six semester hours, while completing his undergraduate requirements. If graduate credit is desired for any part of the work carried, the combined load of the graduate and undergraduate courses must not exceed 15 semester hours.

Seniors who wish to register for graduate courses may apply to the Chairman of the Committee on Graduate Study for information as to procedure.

STUDENT RESPONSIBILITY

It is the responsibility of the student to inform himself concerning, and to carry out all regulations and procedures required by the course he is pursuing. In no case will a rule be waived or an exception granted because a student pleads ignorance of the rule or asserts that he was not informed of it by his adviser or other authority.

REQUIREMENTS FOR THE DEGREES OF MASTER OF ARTS, MASTER OF SCIENCE, AND MASTER OF EDUCATION

Graduates of Prairie View Agricultural and Mechanical College or of any other college of approved standing may, on the satisfactory completion of an approved program of study, receive the degree of Master of Arts, Master of Science, or Master of Education. The degree received will depend upon the field of subject matter emphasized at the graduate and undergraduate level.

The requirements for the degree are:

1. **Admission to Candidacy—**

   A graduate student enrolled in the Graduate School does not automatically become a candidate for the Master's degree. To become a candidate, the student must complete the following requirements:

a. A candidate must be accepted by the department in which the major and minor are to be performed. A student to be considered for admission to candidacy for the Master's degree must present evidence of satisfactory preparation for graduate study in the fields chosen. The general undergraduate record, the record in the fields selected for graduate study, and the record on the graduate work completed will be considered in determining admission to candidacy. As further evidence of satisfactory preparation, the major department may require the candidate to pass a qualifying examination.

b. The prerequisites for the Master of Education degree are eighteen semester hours of undergraduate Education credit and two years of teaching experience.

c. After twelve semester hours of graduate work have been satisfactorily completed, with an average of "B" or better, a formal application must be made for admission to candidacy. This application, approved by the heads of the major and minor departments, must be submitted to the Dean of the School of Graduate Study not later than twelve weeks prior to the date on which the degree is to be conferred.

d. Application for admission to candidacy is made on a form procurable in the Office of the Graduate Dean.

2. **Residence—**

The minimum residence requirement is two semesters of at least 12 semester hours of graduate credit in each, five six-week summer terms, or an equivalent approved by the Committee on Graduate Study.

3. **Course Requirements—**

a. A minimum of thirty semester hours, exclusive of thesis, with an average grade of "B," or better, in courses approved for graduate credit, is required for the degrees of Master of Arts and Master of Science.

b. Thirty-six semester hours of course work are required for the degree of Master of Education.

c. Ordinarily, at least twenty semester hours of graduate work in the major field and ten semester hours in the minor field will be required.

4. **Transfer of Credit—**

Credit obtained in a different, but recognized institution, not exceeding six semester hours, may be transferred and credited to the Master's degree, provided that the work was of graduate character and provided that acceptance of the transferred credit does not reduce the minimum residence period of one academic year. Graduate credit for which the student received less than a "B" grade cannot be transferred to this College. Transfer of advanced credit is not made unless requested by the student in a letter to the Dean of Graduate Study. Such a transfer of credits from another institution to apply in partial fulfillment of the requirements for the Master's degree must be approved by the Graduate Committee. An "A" grade from another institution or earned in extension courses, may not be used to validate a grade of "C" earned in this College.

5. **Extension and Correspondence Courses—**

A student who satisfied requirements for admission to the Graduate School may receive credit toward the Master's degree for extension courses, subject to the following conditions: (1) graduate credit will be given only for courses approved by the Committee on Graduate Study; (2) the courses fit in with the student's program of study; (3) graduate credit for extension courses shall not exceed six semester hours and shall not reduce the residence requirement for the degree; and (4) an "A" grade from another institution or earned in extension courses, may not be used to validate a grade of "C" earned in this College.

Correspondence work is not accepted for graduate credit. With the consent of the department concerned, a student may take work by correspondence to remove deficiencies in his undergraduate training.

6. Not more than a total of nine semester hours of extension and transferred credits combined may be counted toward the Master's degree.

7. **Quality of Work—**
A candidate must maintain at least a "B" average in all work taken in graduate study.

8. **English Usage Requirement —**
A student who is deficient in English usage but who is otherwise doing satisfactory work will be required to satisfy the Committee on English Usage with regard to his use of the English language, before he is allowed to graduate. Such deficiency might be determined by an English Usage examination or by reports of instructors of courses in which a student is registered.

9. **Foreign Language Option—**
At the option of the head of the department in which the major work is done, a reading and working knowledge of French, German or Spanish may be required to complete the requirements for the Master of Arts degree.

10. **Thesis—**
a. In addition to the thirty semester hours in graduate courses all candidates for the degrees of Master of Arts and Master of Science must present an acceptable thesis on a subject germane to the major course of study. The thesis must be written under the direction of a member of the faculty of the Graduate School in the department in which the individual is working. The thesis must have the approval of each member of the Student's Reading Committee. This work must be acceptable with respect to both scholarship and literary quality. A candidate for an advanced degree must have his thesis subject approved by his Chairman at least six months before the date he expects it to be filed with the Graduate Office. A candidate should complete his thesis not later than three weeks before the date of his intended graduation in order that it may be examined by each member of the Advisory Committee of the student. The following directions should be rigidly followed in the writing of the thesis.
The thesis should be typewritten, double-spaced on a durable rag bond, 8½ x 11 inches, leaving the left hand margin at least an inch and a quarter wide, the right-hand margin at least three-quarters of an inch. Set up the title page according to the following form:

TITLE OF THESIS
A Thesis
Presented to the Graduate School
of Prairie View Agricultural and Mechanical College
In Partial Fulfillment of the
Degree of
Master of .....
By
(Author's Name in Full)
(Date on which degree is to be conferred)

Two copies of the thesis must be filed in the Graduate Office.

b. All candidates for the degree of Master of Education are required to enroll in a Seminar in connection with which a seminar paper will be written in specially prepared form approved in writing by the instructor in charge of the seminar. This paper shall deal with a topic in the student's major field of concentration.

11. **Application for the Degree—**
Any candidate expecting to graduate at the end of a regular long session is required to file application for the degree expected by Octo-

ber 15th on a blank available in the Registrar's Office. If graduation is expected at the end of the summer session, the application for the degree should be made by March 15th. The application should be directed to the Registrar.

12. **Final Examination—**

After the thesis has been completed and filed with the Graduate Office, the candidate is required to pass a general comprehensive examination which shall be a test of the candidate's knowledge of the study which he has mainly pursued. This general examination is conducted by the Student's Advisory Committee of which the representative of the major field shall act as Chairman, and at least two other examiners to be appointed by the Dean of the Graduate School, after consultation with the Advisory Committee. Any member of the Graduate Faculty may attend the examination as a visitor.

A candidate who fails in his general examination must register in the Graduate School and carry work for an additional semester before an opportunity will be given for a second examination, unless special permission is granted by the Committee on Graduate Study for an earlier examination and the request of the department concerned.

13. **Recommendation for the Degree—**

Upon completion of all requirements for the Master's degree, candidates are certified for graduation by the Chairman of the Committee on Graduate Study. Degrees are publicly conferred at the close of the regular and the summer sessions.

TIME LIMIT ON WORK FOR MASTER'S DEGREE

A student must complete his Master's work within six consecutive years after his first enrollment in the Graduate School. Credit for individual courses completed in residence between six and seven years before all requirements for the Master's degree are completed may be re-validated by special examination given by the department concerned. Courses completed in extension, or at another institution, cannot be re-validated. A course in which a grade of "C" was earned cannot be re-validated. A re-validated course is valid as credit toward the Master's degree during the term it is re-validated only.

GRADING SYSTEM FOR GRADUATE STUDENTS

Course work for graduate students is reported as "A" (95-100); "B" (85-94); "C" (75-84); "D" (65-74); "F" (below 65); "I" (Incomplete); "W" (Withdrew officially or withdrew passing).

No graduation credit is given for courses in which a grade lower than "C" is received. In order to show satisfactory progress toward an advanced degree a student must receive an average grade of "B." A graduate student is expected to maintain a "B" average in all his work. An "A" grade from another institution, or earned in extension courses, may not be used to validate a grade of "C" earned in this College.

The work of a graduate student performed in connection with his thesis problem is reported as "satisfactory" or "unsatisfactory."

A graduate student may receive a grade of "I"—incomplete, in a course with the privilege of finishing the work at a later date. "Incomplete" work must be made within twelve months after the close of the term in which the grade was earned, or no credit will be allowed for the course.

Graduate students registered in courses that are open to advanced undergraduates must do a certain amount of work in addition to that required of undergraduates. The nature of this additional work may be the reading of additional books on the subject and presenting a review of same, the making

of reports, or such other work as the teacher in charge of the course may deem wise.

Special Note.—Any person reporting for matriculation as a graduate student without having filed an application and other necessary credentials for graduate status (two weeks prior) will be given only tentative graduate status, pending the proper evaluation of undergraduate work. The student should understand that after his credentials have been examined under this tentative arrangement, the institution reserves the right to deny him graduate status even though he has completed all other parts of his registration.

FIELDS OF STUDY

Majors and Minors may be selected in the following fields:

Administration
Agricultural Economics
Agricultural Education
Biology
Business Education
Chemistry
Economics
Elementary Education
English
Extension Education
Guidance
History
Home Economics Education
Industrial Education
Mathematics
Music
Physical and Health Education
Political Science
Secondary Education
Sociology
Special Education
Supervision

For further information regarding course offerings on the graduate level write the Office of the Registrar, or the Office of Graduate Study.

School of Agriculture

AGRICULTURAL ECONOMICS

The prerequisite for majoring in Agricultural Economics is the Bachelor of Science Degree in Agriculture from a recognized college of agriculture.

To fulfill the requirements for a major in this field, one must complete at least twenty semester hours of work in Agricultural Economics. For the minor, the student is required to complete at least ten semester hours of work in the minor field agreed upon in consultation with the major professor and approved by the Dean. However, if it becomes necessary, the hours required in the major and minor fields may vary to the extent of two or three hours accumulated in either field. In such a case, the total hours must amount to thirty or more.

513. Agricultural Finance (AgEc 513 Finance) (3-0) Credit 3. Financial requirements of individual farmers; emphasis placed on credit institutions serving the farmers.

523. Marketing of Farm Products. (AgEc 523 Mktg Prod) (3-0) Credit 3. Study of the principles underlying successful marketing of farm products; study made of various middlemen through which farm products pass from the producer to the consumer; trips arranged for the class to visit and study markets. Prerequisite: Principles of Agricultural Economics.

552. Agricultural Economics Seminar. (AgEc 552 Seminar) (2-0) Credit 2. Current problems in Agricultural Economics discussed; topics reported by students.

613. Government and Agricultural Policy. (AgEc 613 Govt Policy) Credit 3. Primarily for Extension Agents and staff members who want to remain generalists. Provides clearer understanding and better appreciation of the nature of political and economic processes in our democracy and the relationship of these processes to American agriculture.

633. Rural Development for Extension Workers. (AgEc 633 Rural Dvlp) Credit 3. Methods, procedures, and techniques of farm and home development. Farm and home problems will be used in teaching principles of management; group activities will be utilized in developing farm and home plans.

713. Economics of Agricultural Seminar. (AgEc 713 Production) (3-0) Credit 3. Principles of production economics applied to production of major farm products in various areas; economic geography and agriculture, national production programs and the tariff on agricultural products. Prerequisite: Principles of Agricultural Economics.

723. Cooperative Marketing of Farm Products. (AgEc 723 Coop Mktg) (3-0) Credit 3. Principles underlying the successful operation of cooperative marketing organizations; examples of successful fruit, vegetable, livestock and cotton marketing associations.

733. Advanced Farm Management, Business Organization of Texas Farms. (AgEc 733 Farm Mgmt) (3-0) Credit 3. Use of farm management principles in the organization and operation of Texas farms; selecting farms, farm enterprises; planning cropping systems, equipment needs, and capital; trips to representative farms by the class. Prerequisite: Principles of Agricultural Economics.

743. Land Tenure and Problems. (AgEc 743 Land Tenure) (3-0) Credit 3. Land as a factor of production, land utilization, tenure and income. Prerequisite: Principles of Agricultural Economics.

763. Agricultural Land Use Planning. Local, Regional and National. (AgEc 763 Land Use) (3-0) Credit 3. County, state, regional and national land use program, submarginal, and supermarginal land; work of the Farm Security Administration. Department of the Interior, and National Resources Board.

AGRICULTURAL EDUCATION

Undergraduate work equivalent to the Bachelor of Science Degree in Agriculture is required.

503. Agricultural Education Seminar. (AgEd 503 Seminar) (1-0 or 2-0) Credit 3. Designed for all graduate students having majors in Agricultural Education. Only candidates for an advanced degree are eligible to take this course.

513. Methods of Conducting Part-Time and Evening Schools in Vocational Agriculture. (AgEd 513 Evening Schs) (2-0) Credit 3. Teaching Vocational Agriculture. Permission of instructor is required. An analysis of the problems related to part-time and evening schools in Vocational Agriculture and to the development of objectives and procedures in the organization and conduct of such instruction.

523. Supervised Practice Program Building. (AgEd 523 Prog Bldg) (3-0) Credit 3. Teaching in Vocational Agriculture. Permission of instructor is required. Based upon researches in project accounting and analysis.

533. Extension Organization and Program Determination. (AgEd 533 Extn Org) (3-0) Credit 3. Best procedure to be followed in developing state, county, and community programs of work, and outlining of plans of work looking to the orderly development of specific projects; discussion of the place of local studies for the purpose of discovering points of contact and interest for cooperation in the conduct of extension work.

543. Extension Methods. (AgEd 543 Extn Meth) (3-0) Credit 3. Aims and objectives of extension teaching and possible ways of measuring accomplishments reviewed and critically analyzed; various means and agencies employed in extension teaching as result of demonstrations, method demonstrations, meetings, news articles, personal services, bulletins, exhibits and circular letters; evaluated from the standpoint of their teaching functions, adaptability, relative influence, cost, interrelationship and general effectiveness.

553. Organization and Conduct of 4-H Club Work. (AgEd 553 4-H Club) (3-0) Credit 3. Development of 4-H Club programs and organizations; objectives, psychological groupings; community integration; program content; community, county, state, and Federal organization, selection and use of local leaders, annual plans of work, evaluation; methods employed in 4-H work; projects, club meetings, demonstrations, judging work exhibits, achievement days, camps, short courses, and leadership training.

562-563. Special Problems in Home Economics Extension. (AgEd 562-563 Extn Prob) (2-0 or 3-0) Credit 2 or 3. Extension research and other data of special significance to the organization and conduct of extension work with rural women; current problems of home demonstration workers.

613. History and Philosophy of Extension Education. (AgEd 613 Extn Hist) (3-0) Credit 3. Development of Agricultural Extension Education; socio-economic influence responsible for the establishment of extension education; development of agricultural policy that has a bearing on the philosophy of extension education.

623. Public Relations and Extension Education. (AgEd 623 Public Reltn) (3-0) Credit 3. Methods and practices of acquainting the public with the scope and purposes of extension work through print, radio, visual aids, and full use of written and spoken words.

633. Psychology for Extension Workers. (AgEd 633 Extn Psy) (3-0) Credit 3. Significance of psychology to extension workers in relation to its meaning, the job of the extension worker, the meaning of education and of teaching; problem of motivation; nature of learning; basic principle and major types of learning; and conditions favorable for learning.

643. Extension Work Evaluation. (AgEd 643 Evaluation) (3-0) Credit 3. Measuring results of extension work; sampling procedures, analysis and interpretation, and presentation and use of data in reference to study plans; methods of systematically appraising extension work.

712 or 713. Problems in Agricultural Education. (AgEd 712 713 Problems) (2-0) or (3-0) Credit 2 or 3. Community-program approach to agricultural problems; scientific approximation of aims, objectives and standards; participation in field experiences and field research.

722 or 723. Principles of Teaching Methods in Agricultural Education. AgEd 722 or 723 Tchg Methods) (2-0 or 3-0) Credit 2 or 3. Logical and psychological bases for selecting methods of teaching agriculture.

753. Extension Supervision. (AgEd 753 Extn Supv) Credit 3. Analysis of the role of the Extension Supervisor and presentation of best methods available for aiding in the effective operation of the extension program.

AGRONOMY

543. Range and Pasture Improvement and Management. (Agrn 543 Pastures) (2-2) Credit 3. Types of pastures; pasture and range vegetation, methods of establishment and improvement.

554. Soil Chemistry. (Agrn 554 Soil Chem) (2-4) Credit 4. The application of the principles of chemistry to soils. The relationship between chemical properties and soil productivity.

563. Diseases of Field Crops. (Agrn 563 Diseases) (2-2) Credit 3. Common diseases found in field crops and best known methods of control.

573. Fertilizers and Soils. (Agrn 573 Fertilizers) (2-2) Credit 3. Fertilizer recommendations for various crops and localities. Soil types and fertilizer requirements.

593. Advanced Soil Management. (Agrn 593 Soil Mgmt) (2-2) Credit 3. The application of the principles of soil management to the solution of practical farm problems.

ANIMAL HUSBANDRY

513. Extension Practices. (A H 513 Extn Prac) (3-0) Accumulation, interpretation, and dissemination of published and pictorial information as related to livestock practices.

523. Veterinary Obstetrics. (A H 523 Obstetrics) (3-0) Physiology of reproduction, principles of normal and abnormal parturition, diagnosing and treating sterility, abortion, and reproductive failures.

533. Herd and Flock Management. (A H 533 Herd Mgnt) 3-0) Systematic studies of methods of breeding, feeding and management practices used in commercial livestock production.

DAIRY HUSBANDRY

523. Dairy Farm Management. (Dair 523 Dairy Mgnt) Specific examples of dairy farmer needs and how to meet them. Relationship between production, testing, artificial breeding association, sire proving, work of dairy production fieldman.

552-562. Special Problems. (Dair 552-562 Problems) Research problems in Animal Husbandry; planning, execution, compiling and summarizing the data in publication form.

HORTICULTURE

533. Marketing of Fruits and Vegetables. (Hort 533 Mktg Fruits) (2-2) Credit 3. A study of economic factors involved in the marketing of fruits and vegetables, transportation, methods of handling, middlemen and costs of distribution.

ORNAMENTAL HORTICULTURE

633. Problems in the Propagation of Ornamental Plants. (Hort 633 Propagation) Credit 2-4. Problems in the propagation of ornamental plants in which the student is interested and which are approved by the instructor. Problems must be of a representative nature and must be worked out independently.

643. Nursery Principles and Practices. (Hort 643 Nursery) Credit 3. Fundamentals and practices involved in the management of a modern nursery; status of the industry, its development, growing, merchandising, and marketing of nursery products in all phases. Trips to nurseries in the state will be made.

POULTRY HUSBANDRY

502. Special Poultry Problems. (Polt 502 Problems). Research problems of a practical nature in Poultry Husbandry.

523. Poultry Management. (Poul 523 Poultry Mgnt). A detailed study of all phases of farm and commercial flocks, including cost of production.

533. Poultry Disease and Sanitation. (Poul 533 Disease). Anatomy of domestic fowls; poultry sanitation and hygiene; infectious and manifectious diseases of fowls; parasites, minor surgery.

603. Poultry Breeding. (Poul 603 Breeding) A study of inherited characteristics; factors affecting the economic characteristics of poultry.

Cooperative Extension Work in Agriculture and Home Economics

A graduate major leading to a Master of Science degree in Extension Education is offered. The major field of study, which is approximately two-thirds of the graduate work leading to the degree, may consist of courses selected from an approved list. The list of courses for major in the field of Extension Education has been made from courses offered by the department of Agricultural Education, Agricultural Economics, Education, Home Economics Education, Physical Education and Sociology.

The Extension worker is permitted an even broader selection of courses for his minor subjects. Minor courses, constituting approximately one-third of the graduate program, may be chosen from the various academic depart-

ments in the College in which the worker feels the greatest need for subject matter training.

To be permitted to work toward the Master of Science degree in Extension Education, the candidate is required to have the equivalent of a Bachelor of Science degree in Agriculture or Home Economics. Also, the candidate must have had at least two years of satisfactory Extension experience.

A master's thesis or master's written report will be required. It is expected that the work of gathering material for the thesis will provide information useful to the Extension worker.

Two plans are available for obtaining the master's degree. Subject to the approval of the major instructor, the candidate for the master's degree may choose:

PLAN I—with the Master's Thesis. This plan requires 30 semester hours of graduate credit plus a master's thesis.

PLAN II—without the Master's Thesis. This plan requires 36 semester hours of graduate credit plus a written master's report of research or problem on a topic in the major field.

Associated with the credit requirement is the residence requirement. Under either plan, a student must spend in residence a minimum of two semesters or two and one-half twelve-week summer sessions.

Graduate credit may be earned off campus by enrolling in absentia for a limited amount of research or problem work on the recommendation of the head of the major department and with the approval of the Chairman of the Committee on Graduate Study.

Some Extension workers have earned graduate credit at other institutions. If this work comes within the time limitations mentioned below, and if it is of such nature as to fit with the student's program of study at Prairie View A. and M. College, the Committee on Graduate Study will permit up to six semester hours to be transferred from approved institutions. A student who is allowed to transfer six semester hours from another institution may not, because of the residence requirement, be allowed to use credit obtained from off-campus work.

SUGGESTED COURSES FOR A MAJOR IN THE FIELD OF EXTENSION EDUCATION

Agricultural Economics	613	Government and Agricultural Policy
	713	Economics of Agricultural Production
	743	Land Tenure and Problems
	763	Agricultural Land Use Planning
	633	Rural Development for Extension Workers
Agricultural Education	533	Extension Organization and Program Determination
	543	Extension Methods
	553	Organization and Conduct of 4-H Club Work
	563	Special Problems in Home Economics Extension
	573	Methods of Working with Out-of-school Groups
	613	History and Philosophy of Extension Education
	623	Public Relations and Extension Education
	633	Psychology for Extension Workers
	643	Extension Work Evaluation
	713	Problems in Agricultural Education
	753	Extension Supervision
Economics	583	Economics Problems of the Consumer
	573	Labor Problems
	773	Economics Theory and Social Policy
Education	Guid. 543	Principles and Philosophy of Guidance
	Psy. 563	Mental Adjustment
	Sup. 723	Rural School Supervision
Health Education	673	Nutritional Aspects of Health Education
	683	Community Planning for Health
	693	Teaching of Health
Home Economics Education	563	Consumer Education
	703	Seminar in Nutrition
	793	Supervision of Home Economics
	553	Family Life Programs
	753	Extension Supervision
Sociology	503	Introduction to Social Welfare
	603	Problems of Child Welfare
	643	Modern Social Problems

School of Arts and Sciences

BIOLOGY

Requirement for the Master's Degree:

A student entering graduate study in the field of biology must present at least an undergraduate minor of 22 hours in biology, plus the additional requirements which includes: general zoology, botany, and physiology. It is expected that the average grades in these courses in related fields be not less than a grade of "C." Prerequisite courses such as Vertebrate Embryology (Biol 414) and Comparative Anatomy (Biol 424), which the student does not usually take while an undergraduate must be taken before he begins the courses in the graduate program.

If the transcript of the undergraduate record of a student does not meet the above qualifications, additional satisfactory undergraduate work will be required before the student is admitted to graduate status.

The course requirements for the Master's degree are rigidly fixed, however, the choice and number of allied courses may be arranged by conferring with an assigned advisor and will depend on the student's field of specialization and on his or her previous training.

(a) In order to be considered worthy of undertaking work toward the Master's degree, a student must display notable ability in biology, an aptitude in research, and facility in the use of the English Language. To demonstrate the student's fitness in these respects, the Department requires an examination. Action on admission for candidacy for a Master's Degree will be taken after the student has been in residence for at least twelve (12) hours of graduate work in biology with an average of "B" or better.

GRADUATE STUDY

(b) An adviser will be appointed for each student to aid in arranging his program and in carrying it to completion. The sequence of courses to be taken in the Department and the choice of work in allied fields depend on the student's previous training and objectives. An understanding of the basic techniques and concepts of biology, chemistry, physics and mathematics are required.

(c) The language requirements may be fulfilled by (1) a comprehensive examination in French or German or (2) a reading knowledge of French or German. With departmental staff approval another modern language may be substituted for French or German, if it is of major importance in the candidate's field of specialization.

(d) In addition to the examinations required by the Graduate School, the student must pass a written comprehensive examination covering the fundamentals of biology and an oral comprehensive examination defending his research.

The following courses are required for a major who plans a Master's degree in Biology:

1. Advanced Physiology (Biol 534)
2. Systematic Botany (Biol 564)
3. Vertebrate Zoology (Biol 684)
4. Experimental Embryology (Biol 554)
5. Research (Biol 600 or 700)
   a. No more than 2 hours credit in research will be counted toward requirements for the Master's degree.

Electives may be selected from the list of graduate biology courses in the catalog.

The following courses are required by a student who plans a Master's degree with a minor in biology:

1. Advanced Physiology (Biol 534)
2. Systematic Botany (Biol 564)
3. Invertebrate Zoology(Biol 554)

In order to completely satisfy the requirements for a Master's degree in biology a major must successfully complete with a grade of "B" or above twenty (20) hours of biology, plus an acceptable research project and the other requirements previously mentioned. No more than eight (8) hours of graduate work in biology will be accepted for another institution.

A minor must successfully pass the previous mentioned courses with a grade of "B" or above.

No more than six (6) hours credit in a National Science Foundation sponsored program will be counted toward a Master's Degree in Biology.

The student failing to meet the above requirement will be continued on probation for a second semester. In the event he does not meet the requirements for candidacy at this time, it will be understood that no more graduate credits by him will be applicable to the M.S. Degree in Biology.

It is highly recommended that persons who plan to qualify for the M.S. Degree in Biology plan to spend one semester or at least one summer which can be devoted entirely to research.

DESCRIPTION OF COURSES

504. Embryology. (Biol 504 Embryology) (2-4) Credit 4. Descriptive embryology; vertebrate development with special reference to mammals; dissections and examination of selected embryological materials, including serial sections of the fetal pig. Prerequisite: Biology 114 and 124. Lab fee: $3.00.

513. Seminar. (Sci 513 Seminar) (3-0) Credit 3. Seminar in biology, chemistry and physics for in-service teachers. Lectures, demonstrations, reports on current trends in the fields of science.

523. Principles of Plant Pathology. (Biol 523 Pathology) (2-3) Credit 3. The fundamentals of parasitism as they affect plants and the means of controlling the diseases resulting from the various parasites which are detrimental to plants. Lab fee: $3.00.

524. Histology. (Biol 524 Histology) (2-4) Credit 4. Microscopic study of tissues and organs of vertebrates; relation of structure to function. Lab fee: $3.00.

533. Workshop for Elementary Teachers. (Sci 533 Elem Wkshp) (3-0) Credit 3. Workshop in the teaching of Elementary School Science for in-service teachers or supervisors. Lectures, discussions, demonstrations, and construction of teaching materials and special projects; experiences in science principles and generalizations which teachers are called upon to present to and interpret for pupils in their classes.

534. General Physiology. (Biol 534 Physiology) (2-4) Credit 4. Organs of internal secretion, embryology, physiology, microscopic anatomy, and physiology. Prerequisite: Biology 114, 124 and 324.

543. Earth Sciences. (Sci 543) (3-0) Credit 3. Introduction to astronomy; for teachers of science and mathematics in secondary schools; celestial sphere and coordinates thereon; measures of time; the solar system including the earth, moon, planets, comets, meteors, satellites, and the sun; the stars and their classifications; constellation study; double and variable stars; clusters; interstellar materials; the galactic system; and extra galactic systems. Prerequisite: Mathematics 103, 123.

544. General Entomology. (Biol 544 Entomology) (3-2) Credit 4. The structure, life history, habits and means of recognizing and classifying the more common insects. Attention is also given to their relations with man and other animals as well as plants. Lab fee: $3.00.

553. Earth Sciences. (Sci 553 Earth Sci) (3-0) Credit 3. Introduction to geology and weather; for teachers; general principles of physical geology, physiography geologic processes and an introduction to historical geology and introduction to the fundamental principles of weather.

554. Experimental Embryology. (Biol 554 Embryology) (2-4) Credit 4. Modern problems and techniques of the development of the principles and mechanisms of development; analysis in factors operating in the morphogenesis, regeneration and development of selected vertebrates. Prerequisite: Biology 414 and 504.

564. Systematic Botany. (Biol 564 Botany) (2-4) Credit 4. Local flora, giving training in the identification and classification of the higher plants. Prerequisite: Botany 134.

574. Genetics. (Biol 574 Genetics) (2-4) Credit 4. Laws and principles governing heredity in plants and animals; relation to plant and animal improvement and to Eugenics. Prerequisite: Biology 134, 114. Lab fee: $2.00.

594. General Microbiology. (Bacteriology) (Biol 504 Microbiology) (2-4) Credit 4. Morphology, physiology, classification, cultivation of microorganisms, relation to agriculture, premedics, and industry. Prerequisite: General Chemistry, Biology 314 and 114. Lab fee: $3.00.

600. Research in Zoology. (Biol 600 Research) This course will vary in credit according to work performed, its value being indicated at registration. Research in Zoology may be carried on in any area listed which the student has a sufficient background. Lab fee: $8.00.

624. General Parasitology. (Biol 624 Parasitology) (2-4) Credit 4. Morphology, life history, diagnosis and control of the important parasites affecting man and other animals. Prerequisite: Biology 614. Lab fee: $3.00.

634. Neurology. (Biol 634 Neurology) (2-4) Credit 4. A brief review of the brain and cranial nerves of the shark; the morphology of the spinal cord and brain of a mammal; the principle tracts and nuclei (reaction systems) of the cord and brain of the human nervous system. Lab fee: $3.00.

640-650. Seminar in Biological Problems. (Biol 640 650 Seminar). (Required of all graduate students in the department. No credit. Lab fee: $8.00.

664. General Invertebrate Zoology. (Biol 664 Invertebrate) (2-4) Credit 4. Classification, morphology, embryology, physiology, and life histories of invertebrate exclusive of insects. Prerequisite: Biology 124. Lab fee: $3.00.

674. Plant Breeding. (Biol 674 Breeding) (2-4) Credit 4. The application of the principles of genetics to plant improvement. Discussion, reports, lectures, demonstrations and individual participation in techniques and methods are to be used as procedures of instruction. Prerequisite: Biology 254 Genetics.

683. Experimental Genetics. (Biol 683 Genetics) (3-0) Credit 3. Thorough experimentation to show how variations may be brought about; the techniques of mating and breeding to support accepted facts. Lab fee: $3.00.

694. Animal Breeding. (Biol 694 Breeding) (2-4) Credit 4. Application of the principles of genetics to animal breeding and improvement. Comparison of various methods of selection and technique. Prerequisite: Biology 524 Genetics. Lab fee: $3.00.

700. Research in Botany. (Biol 700 Research). This course will vary in credit according to the work performed, its value being indicated at registration. Research in Botany may be carried on in any area listed which the student has a sufficient background. Lab fee: $8.00.

703-713. Selected Topics in Biology. (Biol 703-713 Selct Topics) (2-2) Credit 3. Basic concepts and recent advances and techniques in physiology, bacteriology, botany, genetics and entomology. Experiments, demonstrations and field trips. Prerequisite: General Zoology or Botany or Biology.

704. Biology for Teachers. (Biol 704 Teachers). A training course for prospective teachers of Zoology and Botany. Lectures or conferences, field and laboratory work. Prerequisite: at least Biology 604 and 644. Lab fee: $3.00.

724. Dairy Bacteriology. (Biol 724 Bacteriology) (3-4) Credit 4. Importance of bacteria in dairy products; the number and types of bacteria in dairy products and significance of their occurrence. Lab fee: $3.00.

BUSINESS EDUCATION

The graduate program in business education is designed to provide for the professional development of commercial teachers. The primary purposes of the program are to offer advanced instruction in professional and subject-matter area for teachers, and to develop research in the field.

The program is adapted to the needs of persons who have completed as undergraduates a course of study in business education or persons who have completed an undergraduate minor in business education.

The major in business education leading to the Master's degree consists of 21 hours of which the following are required:

Problems in Business Education	3 hours
Advanced Methods of Teaching Business Subjects	3 hours
Curriculum Construction in Business Education	3 hours
Seminar in Business Administration	3 hours
Business Statistics	3 hours
	15 hours

The minor in business education consists of 9 hours of which the following are required:

Problems in Business Education	3 hours
Seminar in Business Administration	3 hours
	6 hours

DESCRIPTION OF COURSES

523. Problems in Business Education. (BE 523 Problems) (3-0) Credit 3. A survey course. Evolution of business and business practices. Business and Government—laws which govern and regulate business practices. Recent developments in business education. Individual problems are assigned each student.

533. Advanced Methods of Teaching Business Subjects. (BE 533 Adv Methods) (3-0) Credit 3. Consideration is given to intensive review of subject content, selection of objectives and instructional materials, techniques and procedures in presenting educational activities, and to evaluating teaching effectiveness in Typewriting, Shorthand, Bookkeeping and Accounting, and Filing.

553-563. Intermediate Accounting. (BA 553 563 Interm Acct) (3-0) Credit 3. Theory and problems of valuation of assets; application of funds; corporation accounts and statements and their interpretation.

573-583. Business Law. (BA 573 583 Busn Law) (3-0) Credit 3. Fundamental principles of law most frequently involved in business transactions, including contracts, sales, partnerships, corporations, agency, negotiable instruments, property bailments and insurance.

593. Introduction to Finance. (BA 593 Introduct Finc) (3-0) Credit 3. Corporate organization and control; securities; the management of fixed capital and working capital and working capital reserve, surplus and dividend policies; investment banking and the securities market.

623. Curriculum Construction in Business Education. (BE 623 Curr Constr) (3-0) Credit 3. Criteria for solving curricular problems are studied and applied in devising business education curricula for the secondary school and in appraising present school offerings.

633. Real Estate Principles. (BA 633 Real Estate) Credit 3. A survey of the real estate with emphasis upon deeds, leases, zoning, brokerage, selling advertising, property management and real estate law.

723. Seminar in Business Administration. (BA 723 Seminar) (3-0) Credit 3. Cooperative research in one or more economic problems; each member of the class concentrating on a selected phase of the common subject.

733. Business Statistics. (BA 733 Statistics) (3-0) Credit 3. Elementary theory and technique of statistical methods in applicationto typical production, distribution, accounting and general administrative problems of business organization.

CHEMISTRY

Persons who plan to pursue the graduate degree in chemistry must fulfill the undergraduate requirements, which are essentially: one year of inorganic chemistry, one year of analytical chemistry, one year of organic chemistry, one year of physical chemistry. It is expected that the average grades in these courses and of courses in related fields be not less than a grade of "C." The department reserves the right to give a qualification test to students and will make recommendations for the courses needed to enable a student to do graduate work in chemistry.

Students who plan to minor in chemistry on the graduate level must have fulfilled all requirements for a minor in chemistry on the undergraduate level stipulated in the catalog.

Upon acceptance as a graduate student in chemistry an advisor will be assigned who shall advise the student on courses to pursue, etc.

At the completion of a minimum of twelve semester hours of graduate work in chemistry, satisfactorily completed with an average of "B" or better, a formal application must be made for admission to candidacy. This application must be approved by the heads of the major and minor department and submitted to the Director of the Graduate School for approval. Research projects for the thesis will be assigned after the student has been approved as a candidate.

A reading knowledge of French or German is recommended for all candidates.

After approval of the thesis, the candidate will be given a written and/or oral preliminary examination in his major and minor fields. It is required that this exam must be taken at least six weeks before graduation.

The final examination will be oral and shall be over subject materials not covered in the preliminary exam and the thesis.

It is recommended that persons who plan to qualify for the M.S. Degree in chemistry spend at least two years in residence and that those who plan to study during the summer periods plan to spend at least one summer which can be devoted entirely to research. It is further required that the thesis be of such quality that it may be published in an accepted scientific journal. Below is a suggested outline of study for the various fields of chemistry. These, of course, represent the minimum requirement.

Only six (6) hours credit for courses designed especially for summer institutes may be applied toward an M.S. degree in Chemistry, only three (3) hours for a minor. The minimum number of hours required for a minor is ten (10) hours of courses on the graduate level.

ANALYTICAL

Course	Hrs.
Identification of Organic Compounds	4 Lab. and Lec.
Organic Theory	3 Lec.
Physical Chemistry (Advanced)	3 Lec.
Advanced Inorganic	3 Lec.
Advanced Analysis	6 Lab. and Lec.
Seminar	
Research	
Biochemistry	4
Total	24 Hrs. (Exclusive of research)

BIOCHEMISTRY

Course	Hrs.
Identification of Organic Compounds	4 Lab. and Lec.
Advanced Inorganic Chemistry	3 Lec.
Advanced Analysis	3 Lec.
Advanced Physical	3 Lec.
Intermediate Metabolism	3 Lec.
Advanced Organic	6 Lec.
Seminar	2 Lec.
Research	
Total	24 Hrs. (Exclusive of research)

INORGANIC CHEMISTRY

Course	Hrs.
Identification of Organic Compounds	4 Lec.
Advanced Inorganic Chemistry	6 Lec. and Lab.
Advanced Physical	3 Lec.
Advanced Organic	3 Lec.
Advanced Analytical	3 Lec.
Seminar	2 Lec.
Biochemistry	4
Total	25 Hrs. (Exclusive of research)

ORGANIC

Course	Hrs.
Identification of Organic Compounds	4 Lab. and Lec.
Advanced Organic Chemistry	6 Lab and Lec.
Advanced Physical	3 Lec.
Advanced Analytical	3 Lec.
Seminar	2 Lec.
Research	3 Lec.
Biochemistry	4
Total	25 Hrs. (Exclusive of research)

DESCRIPTION OF COURSES

500. Research. (Chem 500 Research) Credit arranged. Problems for investigation may be selected from one of the following fields of chemistry: 1. Analytical; 2. Biochemistry; 3. Inorganic; 4. Organic; 5. Physical. Lab fee: $8.00.

513. Seminar. (Sci 513 Seminar) (3-0) Credit 3. Seminar in biology, chemistry and physics for in-service teachers. Lectures, demonstrations, reports on current trends in the fields of science.

533. Workshop for Elementary Teachers. (Sci 533 Elem Wkshp) (3-0) Credit 3. Workshop in the teaching of Elementary School Science for in-service teachers or supervisors. Lectures, discussions, demonstrations, and construction of teaching materials and special projects; experiences in science principles and generalizations which teachers are called upon to present to and interpret for pupils in their classes.

534. General Biochemistry. (Chem 534 Biochemistry) Credit 4, I or II and Summers. (2-4) Graduate. A basic and extensive course designed for graduate students planning to major or minor in Biochemistry or related fields and who require more than an elementary knowledge of the subject. Physiochemical relations of living matter; chemistry of foodstuffs and tissues; quantitative analysis of blood tissue and urine constituents; enzymes, digestion, absorption, metabolism, nutrition and biophysics. Prerequisites: Chemistry 244, or 315 or permission of instruction.

600. Research. (Chem 600 Research) See Chemistry 500. Lab fee: $8.00.

613 and 623. Advanced Inorganic Chemistry. (Chem 613 623 Inorganic) (3-0) Credit 3. The Periodic law; several forms of the table. Quantum numbers. A brief discussion of chemical bonds and resonance. Structure and properties of typical non-metallic compounds. Behavior of electrolytes in non-aqueous solvents.

700. Research. (Chem 700 Research). See Chemistry 500. Lab fee: $8.00.

703 and 713. Chemical Principles. (Chem 703, 713 Principles) (2-4) Credit 3. Fundamental concepts and principles of chemistry; designed especially for persons interested in the teaching of chemistry. Prerequisite: Graduate or advanced undergraduate standing.

704. Advanced Analytical Chemistry. (Chem 704 Analytical) (1-6) Credit 4. Lecture-recitation; Theory and picture of sampling, solution of refactory materials, special methods of precipitation, use of radioactive material, water analysis, special types of calculations. Laboratory: Gravimentric and electrylytic separation (limestones and alloys), evolution methods, gas analysis, electrometric oxidation, reduction. Lab fee: $2.00.

714. Identification of Organic Compounds. (Chem 714 Compounds) (Qual. Organic Analysis) (2-4) Credit 4. The separation and identification of pure organic compounds and mixtures. Lab fee: $2.00.

723. Quantitative Organic Chemistry. (Chem 723 Quan Organic) (1-4) Credit 3. The determination of elements and functional groups by micromethods with an introduction to micromethods. Lab fee: $3.00.

743. Advanced Topics in Organic Chemistry. (Chem 743 Topics) (3-0). (a) Stereochemistry; (b) Reaction Mechanism; (c) Terpenes and carbohydrates, three hours credit for each topic.

732. Advanced Organic Chemistry. (Chem 732 Organic) (2-0) Credit 2. A review of elementary organic chemistry with an extension of more advanced topics. Includes assigned current subject material.

752. Intermediary Metabolism. (Chem 752 Metabolism) (0-4) Credit 2. A quantitative student of the intermediate formed in cellular metabolism of fats, carbohydrates, proteins, and minerals employing equipment currently used in biochemical research. Both manometric and spectrometric methods are included. Prerequisite: 434, or taken concurrently with 753. Lab fee: $3.00.

753. Intermediary Metabolism. (Chem 753 Metabolism) (3-0) Credit 3. The intermediates formed in the metabolism of fats, carbohydrates, proteins, minerals and nucleic acids and interrelationship between the metabolic pathways in both plants and animals. Prerequisite: 434 and 424.

762. Organic Synthesis. (Chem 762 Synthesis) (1-4) Credit 2. Conferences and laboratory work dealing with the synthesis of various organic compounds. Prerequisite: one year of organic chemistry. Lab fee: $3.00.

763. Biochemical and Clinical Analysis. (Chem 763 Clinical) (0-6) Credit 3. Conferences and laboratory work dealing with analysis of blood, urine and vitamine assay. Prerequisite: Chemistry 435. Lab fee: $3.00.

GRADUATE STUDY

764. Instrumental Analysis. (Chem 764 Analysis) (1-3) Credit 4. The theory and use of modern optical and electrical instruments in chemical analysis. These include the polarograph, oscillometer, geiger counter, nephelometer, colorimeter, titrimeter, potentiometer, pH meter and spectrophotometer. Prerequisite: Chemistry 424. Lab fee: $2.00.

782. Topics in the Chemistry of Nutrition. (Chem 782 Nutrition) (2-0) Credit 2. Lectures, assigned readings on the most recent developments in research on vitamins, amino acids, proteins, minerals and hormones as related to human and animal nutrition. Prerequisite: Chemistry 453.

783. Advanced Physical Chemistry. (Chem 783 Physical) (3-0) Credit 3. A lecture course consisting of advanced topics in physical chemistry: Thermodynamics, chemical kinetics, theories of solutions, phase rule. Prerequisite: Chemistry 434 and mathematics through differential and integral calculus.

800. Research. (Chem 800 Research). See Chemistry 500. Lab fee: $8.00.

802. Electrochemistry. (Chem 802 Electro) (0-4) Credit 2. Conferences assigned readings and exercises in the laboratory dealing with fundamental theories of electrochemistry and the preparation of certain inorganic and organic compounds. Prerequisite: Chemistry 424.

803. Applications of X-Ray Diffraction. (Chem 803 X-Ray) (1-4) Credit 3. Principles and operation of modern x-ray apparatus. Applications to inorganic, organic and physical chemistry. Identification of solid phases, determination of crystal size, and Prerequisite, Chemistry 424.

Chem 813. Quantum Chemistry (Chem 813 Quantum) (3-0) Credit 3. Elementary quantum mechanics, hydrogen atom, hydrogen molecule, bond types, resonance, wave mechanics and applications of quantum mechanics to chemical topics. Lecture three hours a week. Prerequisite: Graduate standing and the consent of Instructor.

Chem 823. Chemical Thermodynamics (Chem 823 Thermodyn) (3-0) Credit 3. The application of the laws of thermodynamics to chemical systems. Calculations of heat of reaction, free energy, entrophy and equilibria with application to various processes.

900. Research. (Chem 900 Research). See Chemistry 500. Lab fee: $8.00.
911 or 913. Seminar. (Chem 911 or 913 Seminar) (1-0 or 3-0) Credit 1 or 3. Discussion of topics which are current in the various fields of chemistry.
921. Seminar. (Chem 921 Seminar). Continuation of 911.

ECONOMICS AND GEOGRAPHY

Majors and minors are offered in the Department of Economics and Geography on the Graduate Level. Students desiring to major or minor in Economics or Geography should consult with the Head of the Department and plan a program in conjunction with the major professor.

The graduate courses in Economics and Geography permit intensive research and study of the integrated undergraduate courses in the various departments of the Social Sciences.

Among the specific objectives are (1) development of ability to use available literature, facilities and techniques of investigation, (2) advancement of independent thought necessary for further study, and (3) experimentation and contribution to the field. Twenty semester hours are required for a major. Students who plan to minor in Economics or Geography are required to complete a minimum of ten hours.

Students who have not completed an undergraduate major in Economics must take, under the guidance of the Head of the Department, certain undergraduate courses in Economics.

For course sequence, or any other information, consult the Head of the Department and the professor offering the course.

The twenty credit hours must be in courses on the graduate level—numbered 500 or above.

THE MAJOR

Course Number	Credit Hours
Econ 513	3
Econ 563	3
Econ 583	3
Econ 603	3
Econ 653	3
Econ 663	3
Econ 703	3

THE MINOR

Course Number	Credit Hours
Econ 563	3
Econ 583	3
Econ 603	3
Econ 653	3

ECONOMICS

501. Seminar in Economics. (Econ 501 Seminar) (1-0) Credit 1. I or II. Informal seminar meeting once per week to allow staff members and majors and minors in economics to develop esprit de corps and to discuss contemporary economic developments. Open to others by consent of the instructor.

513. Economic History. (Econ 513 Econ Hist) (3-0) Credit 3. I. The development of agriculture, commerce, industry and transportation from colonial times to the present. Prerequisite: Economics 533.

563. International Trade. (Econ 563 Trade) (3-0) Credit 3. II. Principles and practices of foreign trade with special emphasis upon international economic relations. Analysis of foreign exchange, balance of payments, foreign investments, tariff history and policy, current problems, and world interdependence. Prerequisite: Economics 533 and consent of the instructor.

573. Labor Problems. (Econ 573 Labor) (3-0) Credit 3. I. Evolution of industrial society; labor movements as a "going government;" protective legislation dealing with wages, hours, and unemployment compensation; problems involving the employer-employee relationships. Prerequisite: Economics 533.

583. Economic Problems for the Consumer. (Econ 583 Consumer) (3-0) Credit 3. II. Family budgets, marketing, price controls and other problems of the consumer. Prerequisite: Economics 533.

603. Money and Banking. (Econ 603 Banking) (3-0) Credit 3. II. A study of the theory of money and banking with emphasis upon monetary policy. Special consideration is given to the implication of methods, monetary and banking control. Prerequisite: Economics 533.

643. Personnel Management. (Econ 643 Persnl Mgnt) (3-0) Credit 3. Development and importance of employee-employer relationships. Consent of instructor.

653. Economic Statistics. (Econ 653 Statistics) (2-2) Credit 3. I. Techniques of gathering, assorting, tabulating and presenting statistical data. Prerequisite: Economics 533.

663. Modern Economic Thought. (Econ 663 Econ Thought) (3-0) Credit 3. II. Analysis and appraisal of recent and contemporary economists and their contribution to public policy. Prerequisites: Economics 533 and 583.

703. Public Finance and Taxation. (Econ 703 Taxation) (3-0) Credit 3. Introduction to the field of government finance; character and growth of public expenditures; public debt creation and fiscal policy; theories, principles and problems of taxation.

743. Capitalism and Socialism. (Econ 743 Capitalism) (3-0) Credit 3. II. Capitalism, unionism, socialism, fascism, and individualistic anticapitalism, each viewed under the headings of conditions, theories and movements. A research course. Prerequisites: Economics 533, Sociology 213 and the consent of the instructor.

773. History of Economic Theory and Social Policy. (Econ 773 Econ Theory) (3-0) Credit 3. I. Analysis of economic theories involved in various institutional and governmental policies, especially those centering around farm control, education, housing, relief, protection of workers, and consumers and social security. Prerequisites: Economics 533 and the consent of the instructor.

GEOGRAPHY

603. Geography of Texas. (Georg 603 Texas) (3-0) Credit 3. Geographical survey of physical resources, population, and commercial production in Texas. The geographic conditions and human adjustments in the major areas or regions of Texas. The natural environment, routes of communication, resources and strategic location in their geographical and historical aspects. Optional field trips.

613-623. Geography for Teachers. (Econ 613 623 Teachers) (3-0) Credit 3. I and II. The relationship of geography to other fields of knowledge concerned with man and his adjustments. The use of geographic premises underlying the analysis of major industries. Tools of geography, space relations, weather, climate, vegetation, soils, landforms population distribution, power and mineral resources. Prerequisite: 12 hours in the social sciences (undergraduate and/or graduate).

633. Geography of the Americas. (Geog 633 Americas) (3-0) Credit 3. Sequential analysis of settlement and economy in the changing environment and resource patterns of the Americas.

683. Political Geography. (Geog 683 Political) (3-0) Credit 3. A survey of the impact of geographical influences upon the establishment and functioning of sovereign states and dependent areas in order to give a background for the intelligent comprehension of current events.

703. Cartography and Graphics. (Geog 703 Cartography) (3-0) Credit 3. Advanced statistical mapping techniques, with emphasis on the mapping of population and settlement. Measures of distribution. History of cartography.

713-723. Geography in Education. (Geog 713-723 H S Methods) (3-0) Credit 3. Analyzes the distinctive contribution of geography to education for citizenship on elementary and secondary levels. Discusses teaching sources and organization of materials, textbooks, and tests. Designed for teachers of geography, social studies, and related fields.

733. World Regional Geography. (Geog 733 Regional) (3-0) Credit 3. World regions as the home of man; a practical, logical and systematic approach to the field of geography; a survey of the world in terms of outlook; regional types.

803. Industrial and Commercial Geography. (Geog 803 Industrial) (3-0) Credit 3. Fundamental geographic factors which enter into the production, distribution and consumption of raw materials of food, clothing, shelter, metals, minerals and fuels; fundamentals of manufacturing and principles of commerce.

SOCIAL SCIENCE

503. Methods of Teaching Social Studies in Secondary Schools. (Soc Sci 503 or Ed 833 HS Methods) (3-0) Credit 3. Methods and devices for teaching History, Economics, Sociology and Political Science, as well as various social studies on the secondary level; selection and use of appropriate instructional materials.

583. Methods of Teaching Social Studies in Elementary Grades. (Soc Sci 583 or Ed 763 Elem Methods) (3-0) Credit 3. Improving the social learning which grows out of the entire life of children both in and out of school, selection and organization of content, learning activities, problem solving and social acting skills; building social values and developing methods of unified and correlated social studies program.

EDUCATION
MINIMUM REQUIREMENTS FOR A MASTER'S DEGREE IN THE DEPARTMENT OF EDUCATION

The minimum undergraduate preparation for the Master's Degree is eighteen semester hours of basic course credit in the field of the graduate major.

Attention is called to the requirements of the Texas Education Agency for the teaching certificate in the field of graduate concentration.

ADMISSION TO CANDIDACY

Action on admission to candidacy for a Master's Degree will be taken after the student (1) has been in residence for at least one semester or summer session, earning at least twelve hours of graduate course credit; (2) has

maintained a "B" average or better; (3) has satisfactorily demonstrated proficiency in English usage and has satisfied all the classification requirements of the college.

The student failing to meet the abave requirements will be continued on probation for a second semester. In the event he does not meet the requirements for candidacy at this time, it will be understood that no more graduate credits earned by him will be applicable to a Master's Degree.

In keeping with proposed changes in state standards for professional certificate programs, those having been admitted to degree and/or certificate programs since September, 1962 will be advised according to a schematic plan consisting of specialization, resource and professional areas of concentration. Courses and professional experiences may be suggested in terms of these areas and more specifically in accord with the specific needs of the graduate student. Specific requirements as to total hours for certificates and/or degrees will remain relatively the same as outline.

Those seeking admission to graduate programs offered by the Department of Education are urged to avail themselves to advisement by an appointed advisor on the departmental level.

Prerequisites: Legal certificate valid for teaching in the Elementary School and the following courses or their equivalent:

Elementary Art	3 hrs.
Public School Music	3 hrs.
Teaching of Reading	3 hrs.
Elementary Science	3 hrs.
Pupil Growth and Development	3 hrs.
	15 hrs.
Psychology 593—Pupil Growth & Development	3 hrs.
Education 683—Elementary School Curriculum	3 hrs.
Education 753—Teaching the Language Arts	3 hrs.
Education 793—Diagnosis and Remedial Treatment of Elementary School Subjects	3 hrs.
Education 743—Problems of the Elementary School Teacher (Seminar)	3 hrs.
Electives from the following:	6 hrs.
Art Education 653—Arts and Crafts in Public School	
Art Education 663—Special Projects in Public School Art	
Education 863—Audio Visual Education	
Supervision 643—Elementary School Supervision	
Administration 633—Elementary School Administration	
Education 603—Survey Course in Education of Exceptional Children	
Administration 563—Child Accounting	
Education 873—Modern Practices in Elementary Education	
Educaton 813—Kindergarten Methods and Materials	
	21 hrs.

SUGGESTED CURRICULUM FOR A MINOR IN ELEMENTARY EDUCATION

Prerequisites: Psychology 593—Pupil Growth and Development	3 hrs.
Education 633—Tchg. Read. in the Elementary School	3 hrs.
	6 hrs.
Education 683—Elementary School Curriculum	3 hrs.
Education 753—Teaching the Language Arts	3 hrs.
Education 763—Teaching the Social Studies	3 hrs.
	9 hrs.

SUGGESTED CURRICULUM FOR A MAJOR IN SCHOOL ADMINISTRATION

Prerequisites: Legal certificate valid for teaching on level of major emphasis and the following courses:	
The Teaching of Reading in the Elementary Grades	
The Teaching of Science in the Elementary Grades **or** six hours of Advanced Secondary Level Methods	6 hrs.
Administration 523—Administration of School Personnel	3 hrs.
Administration 533—High School Administration **or**	
Administration 633—Elementary School Administration	3 hrs.
Administration 713—Fundamentals of School Administration	3 hrs.
Education 683—Elementary School Curriculum	3 hrs.
Education 723—Philosophy of Education	3 hrs.
Psychology 593—Pupil Growth and Development	3 hrs.
Supervision 753—Principles and Practices of Supervision	3 hrs.
Electives	3 hrs.
	24 hrs.

SUGGESTED CURRICULUM FOR A MINOR IN ADMINISTRATION

Prerequisites: Psychology 593—Pupil Growth and Development ..... 3 hrs.
Education 683—Elementary School Curriculum or
Education 583—Secondary School Curriculum ..... 3 hrs.

6 hrs.

Administration 533—High School Administration or
Administration 633—Elementary School Administration ..... 3 hrs.
Administration 713—Fundamentals of School Administration ..... 3 hrs.
Supervision 753—Principles and Practices of Supervision ..... 3 hrs.

9 hrs.

SUGGESTED CURRICULUM FOR A MAJOR IN SUPERVISION OF INSTRUCTION

Prerequisites: Legal certificate valid for teaching on level of major emphasis and the following courses:
Teaching of Reading in the Elementary Grades
Teaching of Science in the Elementary Grades or
six hours of Advanced Secondary Level Methods ..... 6 hrs.
Administration 713—Fundamentals of School Administration ..... 3 hrs.
Education 583—High School Curriculum or
Education 683—Elementary School Curriculum ..... 3 hrs.
Education 723—Philosophy of Education ..... 3 hrs.
Psychology 593—Pupil Growth and Development ..... 3 hrs.
Supervision 643—Elementary School Supervision or
Supervision 663—High School Supervision ..... 3 hrs.
Supervision 673—Trends in Supervision ..... 3 hrs.
Supervision 753—Principles and Practices of Supervision ..... 3 hrs.
Elective ..... 3 hrs.

24 hrs.

SUGGESTED CURRICULUM FOR A MINOR IN SUPERVISION

Prerequisites: Psychology 593—Pupil Growth and Development ..... 3 hrs.
Education 683—Elementary School Curriculum or
Education 583—Secondary School Curriculum ..... 3 hrs.

6 hrs.

Administration 713—Fundamentals of School Administration ..... 3 hrs.
Supervision 643—Elementary School Supervision or
Supervision 663—High School Supervision ..... 3 hrs.
Supervision 753—Principles and Practices of Supervision ..... 3 hrs.

9 hrs.

SUGGESTED CURRICULUM FOR A MAJOR IN SECONDARY EDUCATION

Prerequisites: Legal certificate valid for teaching secondary school subjects; minor in content (subject matter) field.
Education 503—Principles of Secondary Education ..... 3 hrs.
Education 583—Secondary School Curriculum ..... 3 hrs.
Education 673—Methods of Teaching Secondary School Subjects ..... 3 hrs.
Education 723—Philosophy of Education ..... 3 hrs.
Psychology 593—Pupil Growth and Development ..... 3 hrs.
Administration 533—High School Adimnistration or
Supervision 673—High School Supervision ..... 3 hrs.
Elective ..... 3 hrs.

21 hrs.

SUGGESTED CURRICULUM FOR A MINOR IN SECONDARY EDUCATION

Education 503—Principles of Secondary Education ..... 3 hrs.
Education 583—Secondary School Curriculum ..... 3 hrs.
Education 673—Methods of Teaching Secondary School Subjects ..... 3 hrs.

9 hrs.

SUGGESTED CURRICULUM MOR A MAJOR IN SPECIAL EDUCATION

Prerequisites: Legal certificate valid for teaching in the Elementary School or appropriate level served.
Education 793—Diagnosis and Remedial Treatment
Elementary School Subject ..... 3 hrs.
Education 903—Laboratory Experience with Mentally Retarded or
Education 913—Practicum I—Curriculum Building for
Mentally Retarded ..... 3 hrs.
Psychology 523—Principles and Pratices of Educational Measurement ..... 3 hrs.
Psychology 593—Pupil Growth and Development ..... 3 hrs.
Special Education 603—Survey Course in the Education of
Exceptional Children ..... 3 hrs.
Special Education 613—Problems and Methods of Teaching
Mentally Retarded Children ..... 3 hrs.
Special Education 633—Psychology Problems ..... 3 hrs.

21 hrs.

SUGGESTED CURRICULUM FOR A MINOR IN SPECIAL EDUCATION

Prerequisites: Psychology 593—Pupil Growth and Development ..... 3 hrs.
Psychology 523—Principles and Practices of Educational Measurement ..... 3 hrs.

6 hrs.

Special Education 603—A survey Course in Education of Exceptional Children ..... 3 hrs.
Special Education 613—Problems and Methods of Teaching Mentally Retarded Children ..... 3 hrs.
Special Education 633—Psychological Problems ..... 3 hrs.
Special Education 913—Practicum I—Curriculum Building for Mentally Retarded ..... 3 hrs.

12 hrs.

SUGGESTED CURRICULUM FOR A MAJOR IN GUIDANCE

Prerequisites: Legal certificate valid for appropriate grades level served.

Guidance 543—Principles and Philosophy of Guidance ..... 3 hrs.
Guidance 583—Occupational and Educational Information ..... 3 hrs.
Guidance 683—Organization and Administration of Guidance Program..... 3 hrs.
Guidance 733—Principles of Counseling ..... 3 hrs.
Psychology 513—Psychological Testing ..... 3 hrs.
Psychological 533—Fundamentals of Statistics ..... 3 hrs.
Psychology 593—Pupil Growth and Development ..... 3 hrs.

21 hrs.

SUGGESTED CURRICULUM FOR A MINOR IN GUIDANCE

Guidance 543—Principles and Philosophy of Guidance ..... 3 hrs.
Guidance 583—Occupational and Educational Information ..... 3 hrs.
Guidance 693—Organization and Administration of a Guidance Program ..... 3 hrs.
Guidance 733—Principles of Counseling ..... 3 hrs.

12 hrs.

SUGGESTED CURRICULUM FOR A MINOR IN COUNSELING

Guidance 603—Supervised Practice in Counseling & Guidance ..... 3 hrs.
Guidance 733—Principles of Counseling ..... 3 hrs.
Psychology 553—Psychology of Adjustment or
Psychology 563—Mental Hygiene ..... 3 hrs.
Psychology 603—Theory of Counseling ..... 3 hrs.

12 hrs.

SUGGESTED CURRICULUM FOR A MINOR IN ART EDUCATION

Prerequisites: Art Education 253—Special Projects in Public Art ..... 3 hrs.
Art Education 263—Advanced Elementary School Art ..... 3 hrs.

6 hrs.

Art Education 653—Arts and Crafts ..... 3 hrs.
Art Education 663—Special Projects in Public School Art ..... 3 hrs.
Art Education 753—Arts and Recreation or
Art Education 763—Ceramics ..... 3 hrs.
Art Education 823—Methods of Teaching Art in the Elementary Grades ..... 3 hrs.

12 hrs.

ADMINISTRATION

523. Administration of School Personnel. (Adm 523 Sch Persnl) (3-0) Credit 3. Personnel problems of administrators and supervisors, such as: needs for, and needs of different classes of personnel; principles for maintaining good human relationships; and personnel evaluation and records.

533. High School Administration. (Adm 533 High School) (3-0) Credit 3. A survey of problems in High School Administration with emphasis on the organization, administration and supervision of the high school program.

633. Elementary School Administration. (Admn 633 Elem School) (3-0) Credit 3. A survey of problems in elementary school administration with emphasis on the organization, administration and supervision of the high school program.

713. Fundamentals of School Administration. (Admn 713 Fundamentals) (3-0) Credit 3. General principles of organization and administration with emphasis on problems of federal, state and local school administrative organization.

733. Practice in Educational Administration. (Admn 733 Educ Admin) (3-0) Credit 3. The practical application of insights developed in the analysis and solution of administrative problems. Experiences to be supervised cooperatively by practicing administrators and members of the college staff.

ART EDUCATION

653. Arts and Crafts in Public Schools. (ArEd 653 Arts Crafts) (3-0) Credit 3. Working with Leathercraft, woodwork, paper mache, flour and salt ceramics, novelty materials, and metals to enhance one's ability to create with a variety of art media. Lab fee: $2.00.

633. Special Projects in Public School Art. (ArEd 663 Projects) (3-0) Credit 3. Methods, procedures and phases of teaching art; problems of art education and methods of teaching art. Lab fee: $2.00.

763. Ceramics. (ArEd 763 Ceramics) (3-0) Credit 3. Making of pottery shapes by coil, slab, and mole methods, also the use of the potter's wheel; understanding of teaching ceramics in the public schools. Lab fee: $2.00.

823. Methods of Teaching Art in the Elementary Grades. (ArEd 823 Methods) (3-0) Credit 3. Emphasis on solving the problems of teaching creative activities to the gifted child and the retarded child; procedures for selecting art experiences and ways of evaluating pupils' work of all types of children. The student is to keep aware of the current developments in art education for both the elementary and secondary levels.

ELEMENTARY EDUCATION

633. Teaching Reading in the Elementary Grades. (Educ 633 Tchg Reading) (3-0) Credit 3. Problems in the teaching of reading in elementary, junior and senior high schools. Analyzing student needs, using appropriate remelial and developmental techniques, providing for individual differences, and developing basic insights for continued growth of reading efficiency. (Graduate).

683. Elementary School Curriculum. (Educ 683 Elem Curr) (3-0) Credit 3. Study of important developments in elementary education with particular attention to methods and materials which may be used to improve the development of pupils in elementary schools. Problems which are encountered in day-to-day teaching situation receive much attention.

743. Problems of the Elementary Teacher. (Educ 743 Elem Prob) (3-0) Credit 3. Open to undergraduates who are teachers in-service and to graduate students. Special projects, investigations and reports required; attention given to problems presented by members of the class as the outgrowth of their experiences.

753. Teaching of the Language Arts in the Elementary School. (Educ 753 Tchg Lang Arts) (3-0) Credit 3. For those interested in guiding and directing children of elementary school age in reading and in oral and written composition; special emphasis placed on diagnosis and remedial work in reading.

763. Teaching of Social Studies in the Elementary Grades. (Educ 763 Tchg Soc Stud) (3-0) Credit 3. Emphasis on improving the social learning which grows out of the entire life of children both in and out of school. Selection and organization of content, learning activities, problem-solving and social acting skills, building social values and developing methods of unified and correlated social studies program.

773. Teaching of Science in the Elementary Grades. (Educ 773 Tchg Elem Sci) (3-0) Credit 3. Emphasis is placed upon the principles, materials and methods of teaching science, and its influence upon the development of children, in the elementary grades. Laboratory work is designed to help the teacher develop a background of science understanding with suitable experiments and suggestions for appropriate equipment and suitable materials for various age levels.

793. Diagnosis and Remedial Treatment of Elementary School Subjects. (Educ 793 Diag El Subj) (3-0) Credit 3. Techniques of diagnosis and remedial treatment of difficulties in the various elementary school subjects at all levels.

813. Kindergarten Methods and Materials. (Educ 813 Kindrgn Meth) (3-0) Credit 3. A study of selection and use of materials for program organization, creative self-expression, physical and mental activities, directing work habits and informal experiences in language arts in number work.

GENERAL EDUCATION

523. Principles and Practices of Educational Measurements. (Educ 523 Educ Measrmt) (3-0) Credit 3. Typical methods of measuring intelligence, achievement, special aptitudes, and personality with emphasis on the interpretation and use of tests.

723. Philosophy of Education. (Educ 723 Philosophy) (3-0) Credit 3. Critical examination of prominent philosophies of education and their influence on practices in modern education.

733. Comparative Education. (Educ 733 Comparative) (3-0) Credit 3. (Elementary or Secondary Level) An international view of educational problems; educational differences among countries; schools and other educational agencies in England, France, Germany, the USSR and other countries; their relations to social and political institutions and ideas; and a comparison with American Education.

843. Techniques in Educational Research. (Educ 843 Research) (3-0) Credit 3. Study of research in education, the sources of information and techniques available, and approved form and style in preparation of research reports and thesis.

853. Project and Thesis Research. (Educ 853 Project) (3-0) Credit 3 to 6 hrs. Prerequisites: Education 843 and advisors' approval for project or thesis study. Individual conferences and advisement on selection and preparation of research proposal or thesis study.

GUIDANCE

543. Principles and Philosophy of Guidance. (Guid 543 Principles) (3-0) Credit 3. Introductory course. Survey of the field; emphasis on the role of the classroom teachers, supervisors, counselors and other persons in personnel work.

583. Educational and Occupational Information. (Guidance 583 Occuptn Info) (3-0) Credit 3. Where and how to get facts and assemble information about occupations and education. To learn the methods of evaluating and using collected information.

603. Supervised Practice in Counseling and Guidance. (Guid 603 Counseling) (3-0) Credit 3. This course deals with actual counseling experience. The class will be built around the problems encountered in the counseling situation, case discussions, role playing, demonstrations of counseling, observations of counseling interviews, and a limited amount of counseling under supervision.

683. Organization and Administration of a Guidance Program. (Guid 683 Guid Program) (3-0) Credit 3. Emphasis is placed upon purposes and functions of guidance services; initiating, organizing, and promoting a guidance program; selecting, organizing and using adequate tools, techniques and physical facilities for guidance; developing and using evaluative procedures for a program of guidance; relationships, status and scope of the guidance program to the total school and community.

733. Principles of Counseling. (Guid 733 Counsl Prin) (3-0) Credit 3. Introductory course, survey of the area: emphasis on acquainting the student with counseling as it relates to the total development of the individual through a study of the basic principles.

PSYCHOLOGY

513. Psychological Testing. (Psy 513 Testing) (3-0) Credit 3. Theory and Practice of Psychometrics, emphasis upon the individual intelligence test. Students will study a variety of tests and analyze the results.

533. Fundamentals of Statistics. (Psy 533 Statistics) (3-0) Credit 3. Understanding and techniques of collecting, tabulating and computing statistical data from central tendency through variability, relationship, and the significance of differences among such measures.

553. Psychology of Adjustment. (Psy 553 Adjustment) (3-0) Credit 3. A systematic treatment of the principles of the dynamic psychology of human adjustment. The whole individual and how he adjusts to the situation—both outer and inner—that confronts him are considered.

593. Pupil Growth and Development. (Psy 593 Pupil Growth) (3-0) Credit 3. A study of the growth and development of the individual. Emphasis on problems of inheritance, growth, learning, intelligence, emotion, and personality. Consideration given to fundamental psychological needs of the organisms and the conditions under which they may be realized. Applications to educational procedures, on home, school and community.

603. Theory of Counseling. (Psy 603 Counsl Thry) (3-0) Credit 3. To provide a perceptual framework specific to the counseling process and to familiarize the student with the many interrelationships that enter into the counselor's contribution to total mental health program. The course will also give the student a laboratory introduction to actual counseling.

SECONDARY EDUCATION

503. Principles of Secondary Education. (Educ 503 Prin Sec Ed) (3-0) Credit 3. Development of Secondary School and its organization.

583. Secondary School Curriculum. (Educ 583 Sec Curr) (3-0) Credit 3. Principles of organizing and developing the high school curriculum, analyzed in relationship to the "prescribed" and "teacher made" course-of-study in individual schools. Various types of curriculum organization and the related teacher-pupil activities are studied in terms of community and pupil needs. Methods and materials of the related activities of the curriculum, aside from instruction, are given consideration.

673. Methods of Teaching Secondary School Subjects. (Educ 673 H S Methods) (3-0) Credit 3. General Methods treating the principles and practices of successful high school teaching.

SPECIAL EDUCATION

603. A Survey Course in the Education of Exceptional Children. (Sp Ed 603 Excep Child) (3-0) Credit 3. Foundations for special education set forth; its history, philosophy, policy, case studies, measurements and guidance, selection, organization and qualifications of teachers.

613. Problems and Methods of Teaching Mentally Retarded Children. (Sp Ed 613 Methods) (3-0) Credit 3. Characteristics and needs of the mentally retarded child; principles of adapting the curriculum materials and methods of teaching to the needs of the retarded child.

633. Psychological Problems of Mentally Retarded Children. (Sp Ed 633 Psy Problems) (3-0) Credit 3. Specialized study of emotional problems to effect the adjustment of youth who are mentally retarded.

903. Laboratory. (Sp Ed 903 Laboratory) Credit 3. Techniques of teaching the educable mentally retarded; analysis of materials, methods and specialized services along with an evaluative approach; intensive practice in the curriculum center for teachers of the mentally retarded; field trips; study of observation centers and limited experimental studies.

913. Curriculum Building for Mentally Retarded Children. (Sp Ed 913 Curr Bldg) (3-0) Credit 3. Basic philosophy and procedures of unit construction as applied to curriculum development; intensive review of foundations of mental retardation. Practical experience theoretical and scientific concepts of mental retardation.

923. Workshop. (Sp Ed 923 Workshop) Credit 3. Designed to promote areas of professional growth of in-service teachers.

SUPERVISION

643. Elementary School Supervision. (Supv 643 Elem School) (3-0) Credit 3. Study of important developments in elementary education with particular attention given to methods and materials which may be used to improve the development of pupils in elementary schools. Problems which are encountered in day-to-day teaching situations receive much attention.

663. High School Supervision. (Supv 663 High School) (3-0) Credit 3. The nature and philosophy of supervision, the needs of supervision, the activities of supervisors, the promotion of teacher growth, and the appraisal of teaching efficiency in the high school.

673. Trends in Supervision (Seminar). (Supv 673 Trends) (3-0) Credit 3. Trends in the supervision of elementary and secondary public schools with emphasis upon democratic practices related to objectives, content, materials, methods of planning and presenting lessons, evaluation of teaching as well as supervision and the development of skills in group dynamics.

683. Problems in Supervision. (Supv 683 Problems) (3-0) Credit 3. A study of principles governing the processes of supervision and techniques for accomplishing the supervisory programs. Applications are made to both the elementary and secondary school.

733. Practicum in Educational Supervision. (Supv 733 Practicum) (3-0) Credit 3. The practical application of insights developed in the analysis and solution of supervisory problems. Experiences are to be supervised cooperatively by practicing supervisors.

753. Principles and Practices of Supervision. (Supv 753 Principles) (3-0) Credit 3. Open to graduate students who hold or are appointed to supervisory or administrative positions or who have consent of director. Some practice in application of principles required of all. Principles, practices and problems of supervision. Special attention is given to organization for supervision, supervisory programs, research in supervision, cooperation of special agencies, and qualification for supervisors.

ENGLISH

REQUIREMENTS FOR A MASTER OF ARTS DEGREE IN THE DEPARTMENT OF ENGLISH

For admission to graduate study in English a student should present at least an undergraduate minor, 24 semester hours in this field, and English

463, The Teaching of English. A student is expected to pass an English qualifying examination before admission to candidacy is approved.

Prerequisite courses such as the English Language and The Teaching of English which the student did not take while an undergraduate at this college, must be taken before the student begins the courses in the graduate program.

Requirements are stated in terms of minimum essentials. Students are urged to indicate some effort toward enrichment of background by including in their programs more than the minimum essentials. The following courses are required to fulfill the 21 credit hours for a graduate major in English. The 21 credit hours must be in courses on the graduate level—numbered 500 and above.

ADMISSION TO CANDIDACY

Action on admission to candidacy for a Master's Degree in English will be taken after the student (1) has been in residence for at least one semester or summer session, earning at least twelve hours of graduate course credit; (2) has maintained a "B" average or better; (3) has satisfactorily passed a comprehensive examination in English Language and Literature.

The student failing to meet the above requirements will be continued on probation for a second semester. In the event he does not meet the requirements for candidacy at this time, it will be understood that no more graduate credits earned by him will be applicable to a Master's Degree.

THE MAJOR

Course Number	Credit Hours
English 533	3
English 543	3
English 583	3
English 753	3
English 803	3
English 813	3
English 823	3
English 883	3

MINORS

Prerequisite—The Equivalent of an Undergraduate Minor in English

I. In English

The following courses are required to fulfill the 12 credit hours for a graduate minor in English:

Course Number	Credit Hours
English 533	3
English 583	3
English 813	3
English 883	3

II. In Speech and Drama

The following courses are required to fulfill the requirements for a graduate minor in Speech and Drama:

Course Number	Credit Hours
English 513	3
English 523	3
English 623	3 or 6
English 633	3

For the Major and the Minor, the candidate's program of studies is always subject to revision and approval by the department.

DESCRIPTION OF COURSES

ENGLISH

513. Speech for the Classroom Teacher. (Eng 513 Speech) Credit 3. The study of oral communication as especially relates to the speech of the teacher. Training in the oral presentation of ideas. Attention is given to the development of speech patterns and behavior in children and to the recognition of speech problems found in the classroom.

523. Training of the Speaking Voice. (Eng 523 Speech Trng) Credit 3. Voice training for the teacher; to establish correct breathing habits and proper focusing of tone; to overcome voice problems such as nasality, throatiness, breathiness, and vocal fatigue; to develop efficient and pleasing use of the voice.

533. Medieval Literature. (Eng 533 Medievl Litr) Credit 3. Ideas, political and social conditions as revealed in the writings of chief representatives of the period.

543. A Study of the Short Story. (Eng 543 Short Story) Credit 3. Study and analysis of the short story.

583. The Novel. (Eng 583 Novel) Credit 3. Relation between literature and social conditions as revealed in outstanding examples in the English Novel.

613-616. Dramatic Workshop. (Eng 613-616 Drama Wrksp) Credit 3 or 6. Opportunity for the graduate student to study all phases of drama, to assist and participate in the presentation of at least one play to be on the campus during the summer. Field trips involving summer theater productions and radio productions in Houston required.

623. Play Production. (Eng 623 Play Prod) Credit 3. Methods and Principles involved in the directing of high school plays.

633. Acting and Directing. (Eng 633 Acting Wkshp) Credit 3. Fundamental principles and techniques of acting and directing.

643. Studies in Contemporary Drama. (Eng 643 Contp Drama) Credit 3. Study of the historical background of the contemporary theater movements in Europe and in America with emphasis placed on various literary syles that make up modern theater.

753. Seminar in Masterpieces of Literature. (Eng 753 Seminar) Credit 3. Historical and comparative study of masters of English and American Literature.

803. Bibliography and Methods of Research. (Eng 803 Research) Credit 3. Exercises in minor research projects.

813. Literary Criticism. (Eng 813 Criticism) Credit 3. Study of the great critics—classical, foreign, English, and American from Plato to T. E. Eliot.

823. Seminar in Thesis Writing. (Eng 823 Thesis) Credit 3. Open only to candidates engaged in writing the Master's Thesis in English.

833. Studies in the Teaching of English. (Eng 833 Tchg English) Credit 3. Special problems; critical study and evaluation of methods.

853. Twentieth-Century Literature. (Eng 853, 20th Century) Credit 3. Modern and contemporary English and American authors.

873-876. English Workshop in the Language Arts. (Eng 873-876 Workshop) Credit 3 or 6. Provides enrichment in language usage and methods for non-English majors as well as English majors.

883. Chaucer's Major Poetry. (Eng 883 Chaucer) Credit 3. The Canterbury Tales: Linguistic studies.

HISTORY

Majors and minors are offered in the Department of History. Students pursuing the M.A. degree with a major in History should select their program of studies and the professor under whose direction they wish to prepare for examination and write their thesis as early as possible in the first semester of residence. The minor emphasis of the program of study will be arranged by the student and the major professor with the view of keeping the two reasonably related. The program of study and the area of thesis interest, to be approved by the Department of History, must be filed before the end of the first semester or the summer after the entrance of the student into the graduate division of the College.

All students are required to take a course in Research. Majors in History should register for History 563. Arrangements should be made to take this course as early as possible after the beginning of the work for the Master's Degree.

Twenty hours of satisfactory work is required for a major in the field of History, and twelve hours for the minor. The satisfactory completion of a thesis, the subject of which is to be determined in consultation with the major professor, is required of all persons graduating with a major in this field. Minors in this field are allowable only if the candidate can demonstrate that the techniques of this field are necessary for his research project or that the Minor Field is reasonably associated with Major specialty in content and orientation.

Prerequisites for majoring or minoring in the field of History are: (a) Lower college courses in American and European History corresponding to the lower college offering in the field at Prairie View; (b) At least an advanced course in either modern and/or contemporary European or American History; (c) A cumulative average of "B" in their social science courses on the undergraduate level; (d) Preliminary to the graduate regulation on candidacy for the degree, no person shall be acceptable for pre-candidacy status if by the end of the first semester he has not shown the proper inclination to master the skills and attitudes attendant upon graduate study.

DESCRIPTION OF COURSES

503. Methods of Teaching History. (Hist 503 Tchg Meth) (3-0) Credit 3. Discussion and exploration of problems in the methods and materials of instruction in history and social studies.

513. French Revolution and Napoleon. (Hist 513 Fren Revoltn) (3-0) Credit 3. Causes of the revolution; reforms and discipline by Napoleon.

523. Imperialism. (Hist 523 Imperialism) (3-0) Credit 3. Era of Imperialism; causes, results and techniques.

533 and 543. England, 1485 to the Present. (Hist 533-543 England) (3-0) Credit 3. I. Development of Britain in modern historical perspective; Tudors and the Reformation; the Stuarts and Parliament; English expansion under Parliamentary; the Era of Reform and Empire; and World War I, Britain between wars; the fight for survival—global war. Lectures, discussions, special reports. Offered in odd years.

553. Europe, 1914 to the Present. (Hist 553 Europe) (3-0) Credit 3. I. 20th Century European development in its world setting; the background and causes of World War I; the war itself; the Versailles settlement and postwar efforts at political, economic and social security, collectively and nationally; the ideological clash between democracy and totalitarianism which led to global war and the Atomic Age—form the subject matter of the course. Lectures, discussions, special reports. Offered in odd years.

563. Survey of the Critical Attitude and Tools of Scientific History. (Hist 563 Tools) (3-0) Credit 3. I or II. History and its relation to the Social Sciences; the Social Sciences; the subject and the collection and classification of sources; the criticism of data; exposition or the presentation of historical evidence. Lectures, laboratory exercises, special reports.

572. Historical Investigative Paper. (Hist 572 Inves Paper) (2-0) Credit 2. I and II. Credit allowed upon satisfactory completion of required thesis.

583. History of Civilization to 1500. (Hist 583 Civilization) (3-0) Credit 3. Ideals and institutions connected with the political, social and economic life during periods of Greece, Rome, Feudalism, Renaissance, Reformation. Lectures, readings, tests, and special reports.

593. History of Civilization from 1500 to the Present. (Hist 593 Civilization) (3-0) Credit 3. Ideals and institutions connected with political, social and

economic life in the period of rational liberalism and nationalism, the French Revolution, Nineteenth Century English liberalism, nationalistic unifications, socialism, imperialism, and Twentieth Century fascism and democracy. Lectures, readings, tests and special reports.

603. Western American History. (Hist 603 Western Amer) (3-0) Credit 3. II. Seminar in the exploration, settlement and development of the region west of the Mississippi; designed to discover and preserve materials on the early Spanish, French, African and Anglo-Saxon explorations and the contributions of the immigrants who made their homes in the Western region later.

613. American Revolution and the Constitution. (Hist 613 Amer Revoltn) (3-0) Credit 3. Revolutionary Philosophy; Declaration of Independence; Union; and Drafting the Constitution.

623. Problems in Latin-American History. (Hist 623 Latin Amer) (3-0) Credit 3. I. Geography and resources of the Latin-American countries; cultural traits of the population; description of the social, political and economic institutions. History of the relations between the United States and Latin-American countries.

633 and 643. American Foreign Relations, 1775 to the Present. (Hist 633-643 Foreign Rltn) (3-0) Credit 3. I and II. The United States in its relations with Latin-America and the rest of the world; public opinion and the economic, social and political forces that have determined American foreign policy and the agencies through which the policy has been executed. May be taken as Political Science 533-543.

653. Contemporary United States History, 1898 to the Present. (Hist 653 Contemporary) (3-0) or (2-0) Credit 3 or 2. II. Twentieth Century American development thus: America comes of age; the quest for social justice; the Great Crusade (World War I); postwar normalcy and reaction; Democracy in transition—the New Deal; and American leadership in the United Nations. Lectures, discussions, special reports.

663. Economic History of the United States. (Hist 663 U. S. Econ) (3-0) Credit 3. I. Historical review of the development of agriculture, commerce, industry, and business from colonial times to the present; social and economic forces in American society with attention to various mass movements; industrialization for the country and the necessity for governmental regulations; historical interpretation of trade unions, employer's associations, cooperative. Lectures, discussions, readings, special reports.

683. Sectionalism and Civil War, 1700-1865. (Hist 683 Sectionalism) (3-0) Credit 3. I. Regional hypothesis; socio-economic regionalism; government, politics, and the regional compromise in the middle period; ideas in imbroglio—issues and men; reconstruction and the new nation. Lectures, discussions, special reports.

693. The New South, 1865 to the Present. (Hist 693 New South) (3-0) Credit 3. II. Relation of the South to national development since 1860; the death of the Old South; reconstruction and the new nation; the "New Departure," 1876-1900; Southern strivings to follow national patterns, 1900-1932; the New Deal and the new South; the South in world perspective. Lectures, discussions, readings, special reports.

703. Great American Historians. (Hist 703 Amer Histrns) (3-0) Credit 3. Survey of the writers of American history; the sociological, economic and political motivations.

MATHEMATICS

A person holding the Bachelor of Science Degree from an approved college with a major in Mathematics is eligible for admission to graduate study leading to the Master of Science in Mathematics with emphasis in Geometry, Algebra and Analysis. Otherwise, the necessary deficiencies will have to be made up before work can begin toward the Masters degree.

Courses with emphasis on Geometry include:

343 Solid Analytic Geometry
593 Logic and Geometry
643 Integrated Introduction to Geometry
713 Advanced Calculus
783 Differential Geometry

Courses with emphasis in Algebra include:

703 Modern Algebra
713 Advanced Calculus
813 Theory of Matrices
873 Probability

Courses with emphasis in Analysis include:

523 The Real Number System
623 Measure Theory
713 Advanced Calculus
743 Statistics for High School Teachers
763 Intermediate Differential Equations
863 Real Variables
893 Complex Variables

Every program leading toward the Masters degree in Mathematics must include Mathematics 703, 713 and 763.

DESCRIPTION OF COURSES

503. Advanced Mathematics for Elementary Teachers. (Math 503 Teachers) (3-0) Credit 3. Algebraic structures; modulo arithmetic; fundamental theorems of arithmetic; statistics; mean, median, mode, standard deviation, percentiles; grading curves; normal curve; evaluating pupil's understanding of arithmetic.

513. Seminar. (Math 513 Seminar) (3-0) Credit 3. Seminar in Mathematics for in-service teachers. Lectures, demonstrations, reports on current trends in the field of Mathematics. Consent of Instructor.

523. The Real Number System. (Math 523 Real Num Sys) (3-0) Credit 3. The development of the real number system, deductive systems, field properties, order properties, completeness properties, powers and roots, and decimal representations. Prerequisite: Math 224.

533. Selected Topics in Modern Mathematics. (Math 533 Selct Topics) (3-0) Credit 3. Introduction to symbolic logic and set theory; applications to elementary algebra, linear and plane analytical geometry, probability and statistics. Consent of Instructor.

543. Fourier Series and Boundary Value Problems. (Math 543 Fouriers) (3-0) Credit 3. Application of partial differential equations to problems involving heat flow, fluid flow, electric fields, mechanical vibrations, and other similar problems arising in chemistry, physics, radio theory, and engineering. Prerequisite: One course in ordinary differential equations.

553. Calculus for High School Science and Mathematics Teachers. Math 553 Calculus) (3-0) Credit 3. Concise treatment of certain fundamental ideas in the mathematics of the calculus with a point of view of extending, illuminating, and clarifying the teacher's past knowledge with understanding. Consent of Instructor.

583. Structure and Concepts of Arithmetic. (Math 583 Structure) (3-0) Credit 3. Introduction to sets, the number concept, the evolution of numeration systems, modular systems, the number system, measurement, ratio, proportion, and percentage.

593. Logic and Geometry. (Math 593 Logic) (3-0) Credit 3. Elementary logic, plausible reasoning, informal geometry, coordinate geometry, and geometry as a mathematic system.

623. Introduction to Partial Differential Equation. (Math 623 Diff Equatns) (3-0) Credit 3. Basic concepts; techniques for solving first and second order partial differential equations; wave equations; the potential equation; the heat equation; approximate (numerical) solutions; existence and uniqueness theorems.

633. Elementary Functions. (Math 633 Functions) (3-0) Credit 3. Real number system, algebraic functions and their properties, circular functions and their properties, exponential functions and their properties, logarithmic functions and their properties, hyperbolic functions and their properties. Prerequisite: Graduate standing in Mathematics.

643. Integrated Introduction to Geometry for Teachers. (Math 643 Integ Geom) (3-0) Credit 3. The origin of geometry; the three classical problems of antiquity; the five platonic solids; Euclid's elements and fallacies; a modern set of axioms for geometry; geometrics in the Euclidean plane; transformation groups; hyperbolic geometry; elliptic geometry. Consent of Instructor.

653. Intermediate Analysis. (Math 653 Analysis) (3-0) Credit 3. Continuous functions, sequences, limits of functions, integrable functions, properties of integrable functions, the integral of continuous and bounded functions, series; step-functions. Prerequisite: Three (3) courses in Calculus or consent of instructor.

673. Advanced Analysis. (Math 673 Adv Analysis) (3-0) Credit 3. Continuous functions of several numbers, properties of functions of several numbers, the double integral, the iterated integral, the Riemann-Stieltjes integral. Prerequisite: Mathematics 623.

703. Modern Algebra. (Math 703 Algebra) (3-0) Credit 3. Fundamental concepts of Algebra, integral domains, fields. Introduction to such concepts as groups, vector spaces, and lattices. Prerequisite: Math 453.

723. Analytic Mechanics. (Math 723 Anal Mech) (3-0) Credit 3. Statics, the study of equilibrium and dynamics, motion of particles, of rigid bodies, and simple cases of formable bodies under action of forces. Prerequisite: Analytic Geometry.

743. Statistics for High School Teachers. (Math 743 Stat H S Tchr) (3-0) Credit 3. Processes of statistical methods, with reference to applications in various fields and with special application to analysis of school data.

763. Intermediate Differential Equations. (Math 763 Diff Equatns) (3-0) Credit 3. Existence theorems uniqueness theorems, vector and matrix treatment of linear and non-linear systems of ordinary differential equations.

813. Theory of Matrices. (Math 813 Matrices) (3-0) Credit 3. Definitions, matrix algebra; inverse of a matrix, transpose of a matrix, rank of a matrix; matrices and linear transformations; differentiation and integration of matrices; application of matrices to systems of linear equations, quadratic forms, bilinear forms and systems of differential equations. Prerequisite: Math 224.

863. Real Variables. (Math 863 Variables) (3-0) Credit 3. Introduction to point sets, rigorous approach to the concept of function and limit, the Reimann integral, the Lebesgue integral, and some of their generalizations. Prerequisite: Math 713.

873. Probability. (Math 873 Probability) (3-0) Credit 3. Theory of permutations, combinations, distributions, repeated trial, hitting a target, and discussion of the probability integral. Prerequisite: Math 224.

893. Complex Variables. (Math 893 Complx Varbl) (3-0) Credit 3. Rational functions of a complex variable, conformal mapping, Cauchy-Reimann equations, analytical continuation, residues and applications. Prerequisite: Math 713.

MUSIC

The College offers courses leading to the degree of Master of Arts with a major in Music. This degree is open to persons holding a Bachelor of Music or Bachelor of Science or Arts with concentration in music from an institution of recognized standing. These degrees presented as entrance requirements in the graduate department must represent an amount of work equivalent to that prescribed in the School of Arts and Sciences at Prairie View A. and M. College.

Candidates for the master's degree may major in theory, applied music or music education.

MUSIC EDUCATION

Requirements:

12 to 15 hours—30 hours in all subjects

1. Courses in the field: 12-15 hours
   Thesis: A written literary work involving original research.
2. Applied Music (6 hours minimum)
   Continuation of one's applied instrument.
3. Minor Cognates: Any one:—
   Aural Theory
   Written Theory
   Music Literature

683. The Teaching of Music Literature. (Music 683 Tchg Litr) (3-0) Credit 3. Problems in the presentation of music appreciation to high school students.

753. The Teaching of Vocal and Instrumental Music in the Elementary School. (Music 753 Elem Sch Tch) (3-0) Credit 3. Organizational and administration of rhythm bands and small instrumental groups in the elementary school, and of choral groups.

773. Problems in Teaching Sight-Singing and Ear Training. (Musc 773 Sight Sing) (3-0) Credit 3. Students must audit first-year courses and engage in practice teaching plus one hour of theory and one hour of lecture.

873. Teaching of Vocal Music in the High School. (Musc 873 H S Vocal) (3-0) Credit 3. Organization and administration of (a cappela) choirs, boys' chorus or glee club, girls' chorus or glee clubs, and voice training classes.

893. The Teaching of Instrumental Music in the High School. (Musc 893 H S Instrm) (3-0) Credit 3. Organization and administration of bands and orchestras in the junior and senior high schools.

943. Drill and Band Formation in the High School. (Musc 943 H S Band) (3-0) Credit 3. Signals, formations, maneuvers for the Marching Band; band shows and pantomimes.

963. Piano Class Teaching. (Musc 963 Piano Meth) (3-0) Credit 3. Methods of teaching piano in groups of 10 to 30 students in the elementary and high schools.

973. Seminar in Music Education. (Musc 973 Seminar) (3-0) Credit 3. Current philosophy of education; the place of music in the curriculum; review and criticism of music curricula, and evaluation of materials and methods of the various types of music schools existing in America; special study of some problems associated with the aspect of music teaching in which interested.

THEORY

12 to 15 hours—30 hours total for degree

1. Thesis: A written literary work involving original research, or an arrangement of a work, or an original work for full symphony orchestra.
2. Student must include 953, 783, and 793 or 763.

3. Applied Music: (6 hours)
   Continuation of one's applied instrument
4. Minor cognate: Any one:—
   School Music
   Applied Music
   Music Literature

Twelve to fifteen hours (30 hours total in all subjects)

653. Advanced Score Reading. (Musc 653 Score reading) (3-0) Credit 3. Transposition and study of various clefs for instruments all voices; ranges of instruments; introduction to the playing of vocal and instrumental scores since the 16th century; practice in sight reading and studying such scores.

673. Dictation and Sight-Singing. (Music 673 Dictation) (3-0) Credit 3. Advanced courses in aural theory.

693. Analysis of Form. (Musc 693 Analysis) (3-0) Credit 3. Practical analysis of intermediate and larger forms; eighteenth and nineteenth century harmony as illustrated in the works of Haydn, Mozart, Beethoven, Brahms, Franck, etc.

763. Advanced Orchestration. (Music 763 Orchestratn) (3-0) Credit 3. Scoring for full symphony orchestra.

783. Contrapuntal and Chromatic Dictation. (Musc 783 Dictation) (3-0) Credit 3. Dictation in two and three-part counterpoint, and four-part chromatic harmony.

793. Chromatic and Modern Harmony. (Musc 793 Mod Harmony) (3-0) Credit 3. Harmonic materials and technique from creative and analytical angles; harmonic idiom on the period from the late nineteenth century to the present.

833. Advanced Orchestral Conducting. (Musc 833 Conducting) (3-0) Credit 3. Conducting from chamber music and classical symphonic scores; conducting from Romantic and Modern scores. Examination of school music materials and classical symphonic scores. Interpretation of the larger forms of instrumental music.

953. Advanced Analytical Harmony. (Musc 953 Anal Harmony) (3-0) Credit 3. Harmonic analysis of Chorales of Bach; piano sonatas of Beethoven, violin sonatas of Brahms and symphonic works of Mozart, Beethoven, Wagner and Franck.

PIANO

Requirements:

Undergraduate recital already given.

1. Three complete concertos
2. Material for two programs
3. Public performance of a concerto; chamber ensemble, and one recital program piano.
4. Must have two sequences in minor cognates as:
   Aural Theory
   Written Theory
   Music Literature
   Music Education

Four hours of daily practice; two one-hour lessons, one-hour studio class each week, if possible. Three hours each semester.

12 to 15 hours credit required (In Piano alone, 30 hours total for degree

Music 613. Piano. (Musc 613 Piano) (3-0) Credit 3. Three concertos of contrasting type (Mozart, Beethoven, Brahms, Schumann, Chopin, Liszt, Tschaikowsky, Rachmaninoff, etc.)

Music 623. Piano. (Musc 623 Piano) (3-0) Credit 3. Sufficient material for two programs including three or four major compositions of the classical and romantic school. These programs should also include a varied selection of the representative modern compositions.
Bach—Italian Concerto toccatas, transcription by Tausig, Busoni, Liszt, etc., Chromatic Fantasy and Fugue.

Beethoven—A sonata of the grade of difficulty of Op. 53, 57, 109, 110, 111, or Chopin Sonata, and an earlier sonata; or one of Mozart, or a modern one.
Music 713. Piano. (Musc 713 Piano) (3-0) Credit 3. Romantic Composers —Schumann—(Etude Symphoniques); Franck—(Prelude, Chorale and Fugue); Brahms-Handel—(Variations and Fugue); Liszt—(Sonata, etc.)
Music 723. Piano. (Musc 723 Piano) (3-0) Credit 3. Modern Composers—Debussy, Ravel, Schiabin, etc., Contemporary Moderns including American Composers.

VOICE

Requirements:

Undergraduate recital already given.

1. Two complete roles appropriate to the voice
2. Two complete oratorio roles
3. Public performance with orchestra (an aria); one recital (artist's)

Three hours of daily practice; 2 one-hour lessons; one-hour studio class if possible each week. Three hours credit each semester.

12 to 15 hours credit required in voice alone (30 hours total for degree)

Voice 613. (Musc 613 Voice) (Credit 3. A minimum of 6 songs in each of the four languages (in addition to the undergraduate degree)—English, French, German and Italian.

Voice 623. (Musc 623 Voice) (Credit 3. Four arias (Languages not specified).

Voice 713. (Musc 713 Voice) Credit 3. Romantic Composers—Schumann; Schubert, Wagner, Liszt, etc.

Voice 723. (Musc 723 Voice) Credit 3. Modern Composers—Debussy; Rachmaninoff, etc., Contemporary writers including American Composers.

612, 622, 712, 722, 812, 822, 912, 922. (Musc 612 622 712 722 812 822 912 922 Choir) (Choral Practice) (College Choir) (½-4) Credit 2. I and II. Sacred and secular choral music, cantatas and oratorios—offering excellent practical opportunities for expression in part singing. A cappella and accompanying singing.

INSTRUMENTAL MUSIC

Music 613, 623, 713, 723, 813, 823. (Musc 613-823 Flute) (3-0) Credit 3.

Music 613, 623, 713, 723. (Musc 613-723 Violin) (3-0) Credit 3.

DEPARTMENT OF PHYSICAL EDUCATION

Requirements for Master of Science Degree in Physical Education

Students with undergraduate major or minor in Physical Education will be required to complete additional courses designed to give them competence in the areas of subject matter that are basic to this field. A demonstration of skill in teaching a wide variety of Physical Education activities is required. Courses listed below are prerequisite courses:

I. Basic Science:
   A. Minimum
      1. Zoology (or its equivalent)
      2. Anatomy
      3. Physiology

II. Health Education Courses:
   A. Minimum (choice of two)
      1. Personal Hygiene
      2. Principles of Health Education
      3. Methods of Health Education
      4. Health Education

III. Technical Training in Physical Education

1. Organization and Administration of Physical Education	3 hrs.
2. Methods and Materials in Physical Education	3 hrs.
3. Kinesiology	3 hrs.
4. Care and Prevention of Athletes Injuries or First Aid	2 hrs.
5. Tests and Measurements in Physical Education	3 hrs.
6. Coaching	3 hrs.
7. Modern Dance, Folk Dance, or Gymnastics	3 hrs.

PHYSICAL AND HEALTH EDUCATION

Prerequisites for a graduate major will ordinarily consist of not less than 30 semester hours of undergraduate credits in the chosen field or in some related field. A graduate minor will ordinarily be based upon not less than 12 semester hours of undergraduate work.

If the transcript of the undergraduate record of a student does not meet the above qualifications, additional satisfactory undergraduate work will be required before the student is admitted to graduate status.

It should be clearly understood that admission to the graduate school does not imply admission to candidacy for a degree.

Courses for which graduate credit may be obtained are numbered above 500. Courses numbered from 500 to 599 are for graduates and undergraduates. A minimum of 18 prescribed hours and a thesis is required.

Graduate courses required for a major in physical education:

623. Physiology of Muscular Exercise	3 hrs.
633. Advanced Test and Measurements in Physical Education	3 hrs.
635. Administrative Problems in Physical Education	3 hrs.
703. Seminar I—Techniques of Research in Physical Education	3 hrs.
713. Seminar II—Thesis	3 hrs.
723. Kinesiology	3 hrs.
733. Supervision in Physical Education	3 hrs.
753. Scientific Foundation of Physical Education	3 hrs.
763. Physical Education Curriculum	3 hrs.

GRADUATE MINOR IN PHYSICAL EDUCATION

653. Administrative Problems in Physical Education	3 hrs.
733. Supervision in Physical Education	3 hrs.
753. Scientific Foundation of Physical Education	3 hrs.
763. Physical Education Curriculum	3 hrs.

DESCRIPTION OF COURSES

613. Individual Physical Education. (P E 613 Indiv P E) (3-0) Credit 3. I or II. Making a physical education program meet the needs of handicapped individuals; fundamental principles in the selection and adoption of activities in corrective procedure; abnormal physical conditions that come to the care or reports. Prerequisite: Physical Education 314 and 324.

623. Physiology of Muscular Exercises. (P E 623 Exercises) (3-0) Credit 3. I or II. Effects of physical education activities on individuals; general effects of exercise upon bodily functions and effects of special types of exercises upon bodily function.

633. Tests and Measurements. (P E 633 Test Mearmt) (2-1) Credit 3. Tests available in the field for the various situations from elementary school to college. Use of various Anthropometric and strength tests instruments.

653. Administrative Problems in Physical Education. (P E 653 Admin Probms) (3-0) Credit 3. I or II. Coordination of the different phases of the program; administrative problems of physical education, intramural and inter-collegiate athletics.

703. Seminar I—Techniques of Research in Physical Education. (P E 703 Seminar). Techniques used in physical education research; historical, philosophical, descriptive (observation, questionaire, interview, job analysis), experimental and comparative methods; methods of preparing bibliographies, of selecting and defining thesis problems. This course must be taken during the first semester of graduate work. **(Credit 3).**

713. Seminar II—Thesis. (P E 713 Thesis). Guidance in thesis writing analysis of data, presentation of thesis topics in seminary groups for discussion and criticism. To be taken after thesis data have been gathered or with the consent of the instructor. **(Credit 3).**

723. Kinesiology. (P E 723 Kinesiology) (2-1) Credit 3. I. Musculature and bone structure of the body in relationship to the science of movement, joint mechanism and muscle action with special application to athletes and training.

733. Supervision in Physical Education. (P E 733 Supervision.) Study of principles and tools of educational supervision and their application to physical education. **(Credit 3).**

753. Scientific Foundation of Physical Education. (P E 753 Foundation) (3-0) Credit 3. Principles taken from biology, sociology, psychology, anatomy and physiology basic to the teaching of physical education.

763. Physical Education Curriculum. (P E 763 Curriculum) (3-0) Credit 3. Study activities, aims, objectives and outcomes as they relate to courses of study and their construction; development of a course of study for the student's own particular situation.

Requirements for a Graduate Minor in Health Education

A program of Health Education may be arranged for students seeking a graduate minor.

A prerequisite of six semester hours of undergraduate work in Health Education is required of all persons seeking a graduate minor in this field. Personal Hygiene and Community Hygiene are normally accepted for this requirement; however, equivalent courses will be considered. In the case of students with unusual preparation or experience in specified areas related to the health field, an exception may be made with reference to the above requirement after consultation with the departmental adviser.

12 Semester Hours

A program totaling not less than 12 semester hours will be arranged in consultation with the departmental adviser. The following two courses will be required of all students. Other courses may be selected to meet the needs and interest of the student.

REQUIRED COURSES

Health Education 683. Community Planning for Health ..... 3 hrs.
Health Education 693. Teaching of Health ..... 3 hrs.

The student may select any of the following courses to complete the requirement of 12 semester hours:

Health Education 593. Rural Health Problems ..... 3 hrs.
Health Education 663. Health Care of Children ..... 3 hrs.
Health Education 673. Nutrition and Health ..... 3 hrs.
Health Education 901. Environmental Sanitation ..... 1 hr.
Health Education 903-6. Health Education Training Laboratory
(or) Workshop in Health Education ..... 1 to 6 hrs.
Psy. 563. Mental Hygiene ..... 3 hrs.

SAFETY EDUCATION

Education 543. Safety Education ..... 3 hrs.
Auto 503. Drivers Education and Training ..... 3 hrs.

DESCRIPTION OF COURSES

563. Mental Hygiene. (Hlth 563 Mental Hyg) (3-0) Credit 3. Examining and interpreting procedures for protecting and preserving the mental health of the individual through wholesome adjustment to the environment; attention is given to practicing mental hygiene in the classroom.

583. Rural Health Problems. (Hlth 583 Rural Hlth) (2-2) Credit 3. Four areas of health-environmental sanitation and its relations to disease, good health habits and practices within the home, knowledge and use of existing health facilities and services, and community planning for better health, with particular emphasis on problems confronting rural people.

663. Health Care of Children. (Hlth 663 Hlth Care) (3-0) Credit 3. Essentials of growth and development of children—nutrition; purpose and scope of medical supervision; health inspection and observation; formation of desirable health habits, prevention and protection against common diseases; speech disorders, play habits and skills, first aid, and use of community resources.

673. Nutrition and Health. (Hlth 673 Nutrition) (3-0) Credit 3. Essentials of an adequate diet; the food for persons of different ages, and the nutritive values of common food materials; special concern given regarding the relationship of nutrition and health education; materials from various agencies, diet surveys and projects.

683. Community Planning for Health. (Hlth 683 Cmty Plng) (3-0) Credit 3. Community structure, resources and organization in the promotion of healthy living; social, economic, political and educational aspects of community health problems.

693. Teaching of Health. (Hlth 693 Tchg Hlth) (3-0) Credit 3. Principles, materials, methods and resources in teaching health in elementary and secondary schools.

901. Environmental Sanitation. (Hlth 901 Sanitation) (1-0) Credit 1. One-week Institute on environmental sanitation offered as a part of the Training Laboratory in Health Education or can be taken separately. Sponsored jointly by the College and the Texas State Department of Health.

903-906. Health Education Training Laboratory or Workshop in Health Education. (Hlth 903-6 Hlth Lab) (2-2) or (3-6) Credit 3 or 6. Training Laboratory in Health Education sponsored jointly by the College and the State Department of Health. Provisions made for students to participate in a variety of procedures for investigating, analyzing and evaluating community action programs in health; local schools and community are used as a laboratory in studying problems.

543. Safety Education. (Hlth 543 Safety Educ) (2-2) Credit 3. The general program of safety education in public schools is presented with special reference to the selection and organization of materials including the methods and techniques of instruction. First aid, visual aids, safety projects, special programs, and the utilization of agencies outside of school.

PHYSICS

Physics 512, 523. General Physics (for the In-Service Teacher) (Phys 513, 523 Gen Physics) (3-3) Credit 3. Fundamental Principles of Physics with laboratory. Emphasis on principles and new approaches to the teaching of physics. Prerequisite: Consent of Instructor. $2.00.

POLITICAL SCIENCE

Students who concentrate their graduate studies in political science must elect Political Science 563—Bibliography and Methods in Political Science. Each student must also complete a Master's thesis which has been prepared under the direction of and approved by the faculty of the Department of Political Science.

Prerequisites for a major in political science are: (1) an undergraduate major in political science, 30 semester hours of credit; or (2) undergraduate minor in political science, 18 semester hours; or (3) a major in social science with six semester hours in American Government. Those students who had an undergraduate major in political science may elect at least twenty semester hours in political science from four or five fields. Those who present a minor in political science will be required to elect 24 semester hours in four of the five fields required. Social Science majors will be required to present 24 semester hours in five fields of concentration. All other students desiring to major in political science will be required to complete thirty semester hours in the five fields of concentration.

Programs of study should be constructed in consultation with an advisor from the faculty of the Department of Political Science.

DESCRIPTION OF COURSES

513. Propaganda Public Opinion and Pressure Groups. (PoSc 513 Propaganda) (3-0) Credit 3. Functions and techniques of pressure groups; the nature, role and identification of public opinion and propaganda.

523. Municipal Administration and Politics. (PoSc 523 Municipl Adm) (3-0) Credit 3. An examination of the organization, planning and problems of municipal administration and government; operation of the policy making process at the municipal level.

563. Bibliography and Methods in Political Science. (PoSc 563 Bibliography) (3-0) Credit 3. The discipline, its authorities and its methodology; use of public documents and other source materials. (Required of all majors in political science.)

593. International Organization. (PoSc 593 Intrnatl Org) (3-0) Credit 3. Development of international organization; major problems of United Nations.

603. Ancient and Medieval Political Theory. (PoSc 603 Ancient Thry) (3-0) Credit 3. Political theories of the Greek, Roman and medieval European thinkers; special attention to Plato, Aristotle, Cicero, St. Augustine, John of Salisbury, St. Thomas Aquinas and Dante.

613. Modern Political Theory. (PoSc 613 Modern Thry) (3-0) Credit 3. Political theories from the Reformation to the present; special attention to Machiavelli, Bodin, Hobbes, Montesquieu, Locke, Rousseau, Jefferson, the Mills, Hegel, Marx and the socialist theorists.

633. Seminar in American Foreign Policy. (PoSc 633 Frgn Policy) (3-0) Credit 3. Analytical and historical study of the content of American foreign policy; government machinery and political processes in its formulation.

653. The Constitution and Private Rights. (PoSc 653 Rights) (3-0) Credit 3. Rights and duties of United States citizenship; crucial issues of individual freedom, subversion, loyalty and governmental authority as adjudicated by federal courts.

673. American Constitutional Law. (PoSc 673 Const Law) (3-0) Credit 3. Basic principles of the American constitutional system; judicial interpretation and application of those principles in construing powers of government and the rights of persons.

693. Seminar in Areal Politics. (PoSc 693 Seminar) (3-0) Credit 3. An analysis of the international implications of domestic and foreign policies pursued by countries located in the East, Europe, Africa and Latin America.

703. Seminar in American Political Thought. (PoSc 703 Amer Thought) (3-0) Credit 3. The theoretical adaptations and modifications of historic democratic concepts of government by leading American theorists.

723. The Presidency. (PoSc 723 Presidency) (3-0) Credit 3. Evolution of the office of the president of the United States; his powers in the areas of politics, administration, legislation, war and foreign affairs.

753. Public Personnel Administration. (PoSc 753 Persnl Admin) (3-0) Credit 3. Development and problems of the public service; recruitment, examination, placement, renumeration, morale, retirement, loyalty and responsibility.

SOCIOLOGY

Students seeking a Master's degree in Sociology should consider the following objectives and requirements:

1. A development of knowledge sufficient to make community surveys necessary for the formulation of programs of community organization.
2. A development of interest and ability of the student in the field of scientific sociology.
3. The development of an appreciation for the ability to interpret native and folk culture of the Nation and the Southwest.
4. The development of the ability to interpret mass behavior so as to make such interpretation functional in leadership.

Requirements

Students who major in Sociology must present a minimum of 9 semester hours in undergraduate Sociology with substantial credits in History, Political Science or Economics. Students who have had fewer than 18 hours of Social Sciences will be required to complete additional undergraduate hours in Sociology before receiving a Master's Degree.

Students who minor in Sociology should present a minimum of 9 undergraduate hours in many of the Social Sciences.

503. Introduction to Social Welfare. (Soc 503 Soc Welfare) (3-0) Credit 3. I or II. Historical development of social work; fields of specialization; functions of agencies; job opportunities; and contributions of outstanding leaders.

543. Urban Sociology. (Soc 543 Urban) (3-0) Credit 3. I. Considers the city and its hinterland as a sociological entity; urban neighborhoods, population groupings and movements, social processes, trends, and problems are treated in the light of historical, ecological and social factors.

563. Social Research. (Soc 563 Research) (3-0) Credit 3. II. A study of the various methods of social investigation, such as the social survey, the case study methods, historical, statistical and ecological techniques. Emphasis is placed on the collection, analysis and interpretation of different types of information in connection with special problems of social research. Students are required to complete an individual piece of social investigation.

DESCRIPTION OF COURSES

583. Anthropology. (Soc 583 Anthropology) (3-0) Credit 3. I or II. A study of the origin and development of human culture. Special emphasis is placed upon schools of culture and contemporary culture.

603. Problems of Child Welfare. (Soc 603 Chld Welfare) (3-0) Credit 3. I or II. A study of child welfare movements and contemporary children's agencies and their services. Includes programs for improving the home and for substitute care, safeguarding health, employment protection, delinquency prevention, and other needs of children and youth.

643. Social Disorganization. (Soc 643 Disorganiztn) (3-0) **Credit 3. I or II.** Analysis of the social process; the disorganization of the society and the individual.

663. Sociology for Extension Workers. (Soc 663 Extn Workers) **Credit 3.** Analysis of the whole complex of social arrangements, group characteristics, traits and institutions that are concerned with rural living and go to make up rural society. Emphasis on techniques for analyzing special social problems and for utilizing social organization as a means of achieving program objectives.

683. Sociology of Juvenile Deviation. (Soc 683 Juv Deviation) (3-0) **Credit 3. I or II.** Effects of social disorganization and value conflicts upon the behavior of juveniles in contemporary society; Classical and contemporary studies in the area.

733. Criminology. (Soc 733 Criminology) (3-0) **Credit 3. I.** Nature, extent and causes of crime; various schools of criminology, individualization of criminal treatment, and modern techniques of criminal investigation. Prerequisite: Sociology 213 and 223.

School of Home Economics

Students desiring to major in Home Economics on the graduate level must present undergraduate subject matter credits in the following areas: the social sciences, the physical sciences, biological sciences, arts, and education which shall be satisfactory to the adviser under whose direction, the major work is to be done. In addition adequate preparation in undergraduate work in Home Economics is necessary.

Majors may be taken in Home Economics Education and General Home Economics. Minors may be taken in Education, Administration and Supervision, Home Economics Education, and General Home Economics.

Twenty (20) semester hours or more are required for a major, and ten (10) semester hours or more are required for a minor for the Master of Science Degree. Six additional hours, including the Master's Essay are required for the Master of Education Degree. Consult the Dean or major professor for additional information.

For the general requirements for admission to candidacy, residence, course requirements, transfer of credit, quality of work, thesis, and application for the Master's Degree, apply in the School of Home Economics. The student is urged to refer to the graduate bulletin for all desired information.

GENERAL HOME ECONOMICS COURSES

513. Studies in Home Management. (H E 513 Home Mgnt) (3-0) **Credit 3. I and II.** A review of management studies, trends in the field and research related to management.

533. Home Furnishings Workshop. (H E 533 Workshop) (3-0) **Credit 3. I and II.** Appropriate interior decorations, proper arrangement of furniture and equipment for all rooms according to their location in the house. Experience in making slip covers, draperies and lampshades.

553. Family Life Problems. (H E 553 Family Life) (3-0) **Credit 3. I or II.** Ways different families achieve their purposes with resources available. Management procedures for families on various income levels. Individual problems according to needs of student enrolled.

563. Consumer Economics. (H E 563 Consumr Econ) (3-0) **Credit 3. I and II.** Family budgets, marketing, price control and other problems of the consumer.

583. Methods and Techniques of Child Study. (H E 583 Child Study) (3-0) Credit 3. I or II. Open to seniors and graduate students. Modern methods and suitable techniques for studying children. Experimentation by various methods of studying children.

703. Seminar in Nutrition. (Fds 703 Seminar) (3-0) Credit 3. I and II. Review and interpretation of the literature of field, emphasizing recent advances and involving individual assignments and reports.

713. Problems in Costume Design. (Clo 713 Costume Dsgn) (0-6) Credit 3. Draping, pattern making and design for students with adequate background. Lab fee: $2.00.

733. Seminar in Foods. (Fds 733 Seminar) (3-0) Credit 3. I and II. Reviews and interpretations in the field of foods and experimental food prepration, involving individual assignments and oral and written reports.

753. Clothing Seminar. (Clo 753 Seminar) (3-0) Credit 3. I and II. Aspects of clothing which directly affect the consumer.

763. Problems in Home Economics. (H E 763 Problems) (3-0) Credit 3. I and II. Work in the field of major interest. Reports, discussion and term papers.

773. Advanced Clothing for Graduate Students. (Clo 773 Adv Clothing) (3-0) Credit 3. Advanced problems in garment construction; selection, design and construction of suitable clothing for both children and adults. Lab fee: $2.00.

803. Draping and Construction. (Clo 803 Draping) (0-6) Credit 3. Principles of design; draping of fabric on dress form; interpretation of design in relation to different figures. Construction of one draped garment.

813. Child Development Curriculum. (H E 813 Child Dvlp) (3-0) Credit 3. I or II. Designed to explain the modern curriculum of the nursery school, kindergarten and elementary school. Emphasis on methods and materials in various areas.

883. Personal and Family Finance. (H E 883 Fmly Finance) (3-0) Credit 3. I and II. General problems of individual and family handling of money. Especially planned students with limited background experience on the graduate level.

900. Principles of Human Nutrition. (Fds 900 Nutritn Prin) (3-0) Credit 3. Application of nutrition to individual problems.

903. Organization and Management. (H E 903 Organization) (3-0) Credit 3. Management for Institutional feeding—personnel, marketing, preparation, service and sanitation.

913. Problems of Youth. (H E 913 Youth) (3-0) Credit 3. Problems concerned with youth during adolescent years. Some attention given to problem cases as found in Home and Family Life classes.

993. Nutrition and Diet Therapy. (Fds 993 Diet Therapy) (3-0) Credit 3. Planning diets for various diseases and conditions. Some experience in use of facilities and work with formula.

HOME ECONOMICS EDUCATION

503. Methods and Materials in Extension Programs. (H Ed 503 Extn Program) (3-0) Credit 3. I or II. A study of aims and values of home and summer experiences and club work; consideration of special problems, present trends; methods of promotion; selection and organization of subject matter.

523. Research Problems. (H Ed 523 Problems) (3-0) Credit 3. I and II. Methods used in collection, treatment and interpretation of data in the field of Home Economics.

543. Advanced Methods. (H Ed 543 Adv Methods) (3-0) Credit 3. I and II. Newer trends in teaching Home Economics.
573. Research. (H Ed 573 Thesis) (3-0) Credit 0-3. I and II. Thesis involving extensive study of chosen problems.

593. Home Economics Curriculum. (H Ed 593 Curriculum) (3-0) Credit 3. I and II. The objectives of home economics in high schools' recent surveys and other methods used in determining content of curricula.

643. Adult Education. (H Ed 643 Adult Educ) (3-0) Credit 3. I and II. Objectives of adult education planning program; teaching procedures; and discussion of special problems. Special reports and bibliographies.

723. Measurement. (H Ed 723 Measurement) (3-0) Credit 3. I and II. Home Economics subject matter tests, scales, construction and evaluation of objective devices.

743. Statistical Techniques. (H Ed 743 Statistics) (3-0) Credit 3. I and II. Methods of interpretation and utilization of data.

793. Supervision. (H Ed 793 Supervision) (3-0) Credit 3. I and II. Principles of supervision as applied to homemaking and Home Economics teaching and learning.

843. Techniques in Educational Research. (H Ed 843 Research) (3-0) Credit 3. Research in home economics education, sources of information and form in preparation of research reports.

613. Extension Clothing Methods. (Clo 623 Extn Methods) Credit 3. Methods for teaching clothing in home demonstration clubs and 4-H clubs. Methods chosen by class based on their county situations. Late developments in subject matter will bring the class up-to-date in the clothing field.

673. Nutrition for Extension Workers. (Fds 673 Extn Nutritn) Credit 3. Practical course in nutrition and methods of teaching nutrition in extension. Discussion of various methods for putting across extension foods and nutrition programs in the country as well as how to keep up-to-date in the subject.

753. Extension Supervision. (H Ed 753 Extn Supv) Credit 3. Analysis of the role of the Extension Supervisor and presentation of best methods available for aiding in the effective operation of the extension program.

School of Industrial Education and Technology

In the School of Industrial Education and Technology, advance work is offered leading to the Degree of Master of Science, and Master of Education in the field of Industrial Education.

Prerequisite to graduate work in these fields, is the completion of a four-year curriculum from a College or University of recognized standing, substantially equivalent to that required of undergraduates in the School of Industrial Education and Technology. Students desiring to do graduate work who do not have the necessary prerequisites will be required to make up all deficiencies as directed by the Dean of the School of Industrial Education before they will be permitted to begin graduate courses.

To qualify for the Master's Degree with a major in Industrial Education at least fifteen (15) semester hours of the total required must be in courses offered to graduate students only. Also, all students will be required to take a course in Industrial Education 763—Research and Thesis Writing. Two-thirds of the work should be in the major field of Industrial Education, and one-third should be in a minor field chosen with the advice and approval of the Dean of the School of Industrial Education and Technology.

For advanced work in the School, good library facilities and laboratory equipment are provided to carry out the work suggested. Certain research problems may be made available in cooperation with other departments of the College.

AUDIO-VISUAL EDUCATION

503. Audio-Visual Materials in Instruction. (Audo 503 Materials) (2-2) Credit 3. I and II. The improvement of learning and teaching through the effective use of Audio-Visual ins tructional materials; operational procedures for all types of Audio-Visual equipment.

513. Administration and Supervision of Audio-Visual Education. (Audo 513 Administratn) (3-0) Credit 3. I. Emphasis on the supervision of budget and planning of an audio-visual program—for teachers appointed as audio-visual coordinators in their schools, as well as for principals, classroom teachers and students planning a teaching career.

523. Preparation of Graphic Materials. (Audo 523 Graphic Matl) (1-6) Credit 3. II. Emphasis on the construction of audio-visual materials for classroom teaching. Basic production techniques of audio-visual material for various teaching areas. Lab fee: $2.00.

543. Laboratory in Audio-Visual Aids. (Audio 543 Laboratory) (1-6) Credit 3. II. Practical experience in the mechanical manipulation of the various audio-visual aids and devices. Includes mechanical theory of aids. Lab fee: $2.00.

DRIVER EDUCATION

503. Driver Education and Traffic Safety. (Dr Ed 503 Traffic Sfty) Credit 3. I, II. Professional preparation to meet the driver education and traffic safety needs of secondary schools. Laboratory experience in teaching beginners to drive in dual control cars; psycho-physical testing, teaching materials and procedures, state laws and regulations.

INDUSTRIAL EDUCATION

513. Curriculum Construction and Course Making in Industrial Education. (IE 513 Curriculum) (3-0) Credit 3. I. Principles of curriculum construction and course making; study of curriculum concepts as they have prevailed in modern education; comparative study of Industrial Education curricula as used throughout leading high schools; analytical technique in curriculum construction; course making and syllabus construction.

523. Tests and Measurements in Industrial Education. (IE 523 Test Measrmt) (3-0) Credit 3. II. Sources of instructional testing and evaluating materials; construction and use of test and evaluating devices; administering, scoring, recording and interpreting tests, progress charts, diagnosis of difficulties, analysis of teaching problems as related to evaluation.

533. Instructional Methods in Industrial Education. (IE 533 Methods) (3-0) Credit 3. I. Study of methods devices, techniques as applied to teaching industrial subjects; analysis and evaluation of student learning difficulties and teaching responsibilities in industrial classes; also study of the nature, preparation and use of instruction sheets.

542-3. Trade and Job Analysis. (IE 542-3 Job Analysis) (2-0) (3-0) Credit 2 or 3. II. Analysis technique as it has been developed by various leaders in Industrial Education; job analysis for the purpose of determining the content of training for an occupation; related content analysis for determining what should be taught as classroom material; analysis of a trade, industry or industrial plant for determining the general outline of a program of trade or industrial training.

563. The General Shop. (IE 563 General Shop) (3-0) Credit 3. II. The general shop organization, its contribution to attainment of cardinal objectives of the modern high school, current practices as to type of shops, equipment, instructional materials and procedures.

583. Industral Arts for the Elementary School. (IE 583 Elem Sch Art) (2-0) Credit 2. I and II. A course designed for teachers, supervisors, principles of elementary schools. Fundamental concepts, philosophies of Industrial Arts in the elementary school; function and scope, organization, administration, activities and methods of teaching Industrial Arts on the elementary level.

603. Workshops and Institutes in Industrial Education. (IE 603 Workshop) Credit 3. I and II. A study of the development of solutions for problems in Industrial Education.

A. Cosmotology Institute
B. Industrial Arts Teacher Workshop
C. Vocational-Industrial Teachers Workshop
D. Administrators Workshop

712-3. Administration and Supervision of Industrial Arts Education. (IE 712-3 Administratn) (2-3) (3-0) Credit 2 or 3. I. How to organize, supervise and administer functioning programs of Industrial Arts; the duties of a supervisor and director of Industrial Arts; special problems of supervision and administration of Industrial Arts; relationships to local, state and federal educational authorities, correlating Industrial Arts with other phases of education.

732-3. Philosophy of Industrial Education. (IE 732-3 Philosophy) (2-0) (3-0) Credit 2 or 3. I. Fundamental concepts of progressive Industrial Education; principles, beliefs, and assumptions in regard to Industrial Education; its objectives and relationship to other phases of education; its justification in the total scheme of modern education.

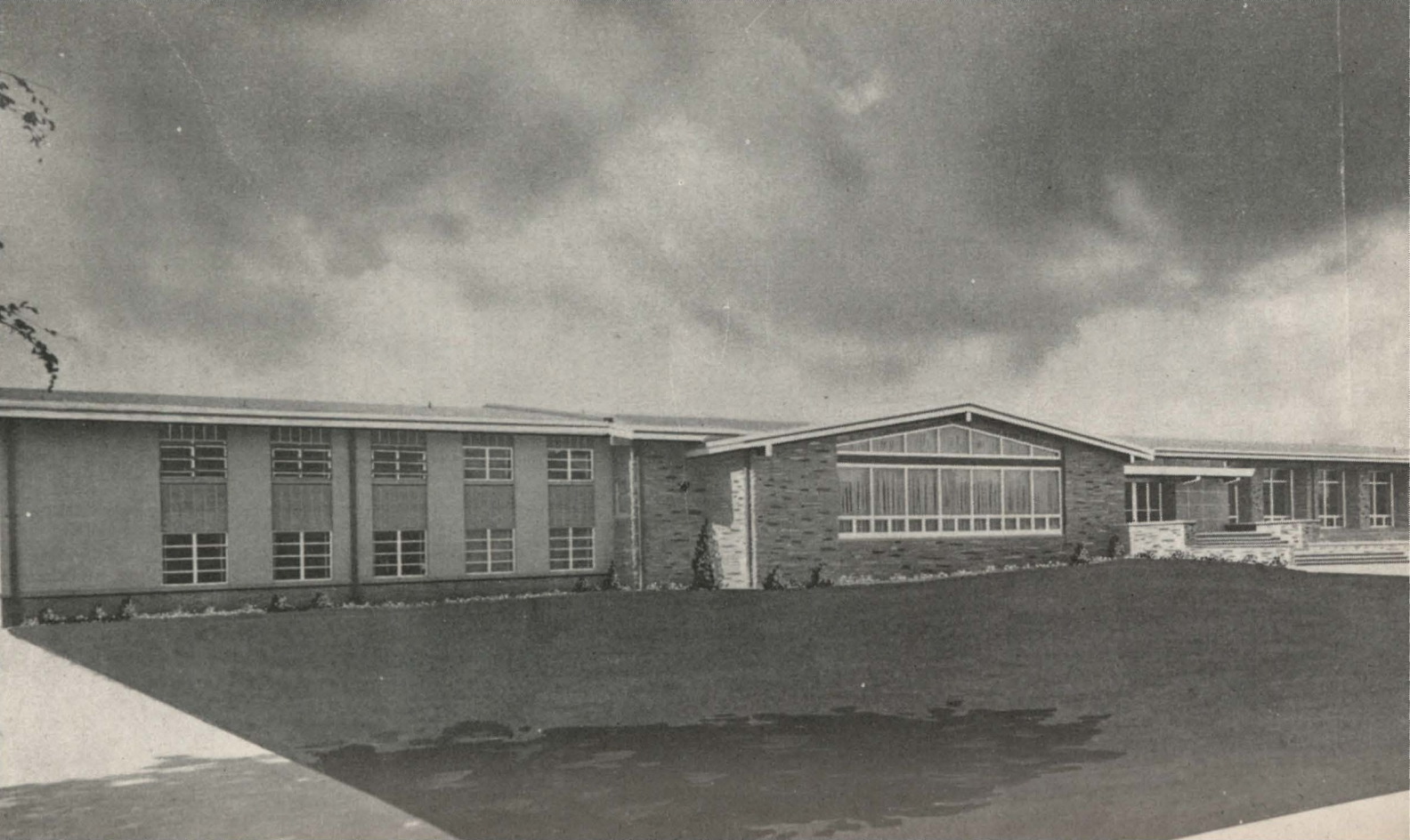
743. The History of Industrial Education. (IE 743 History) (3-0) Credit 3. II. A survey of the early movements, experiments and writings concerning leaders of the United States and European countries. Intensive study of developments in Industrial Education since 1850. A comparative study of leaders, movements, institutions and literature in the field of Industrial Education.

753. Practicum in Industrial Education. (IE 753 Practicum). Maximum credit 6 hours. Development of current problems as reflected through the merging of practical experience with theoretical and scientific concepts.

763. Research and Thesis Writing. (IE 763 Research) (3-0) Credit 3. I and II. Required of all majors in Industrial Education. Methods and techniques of research writing and reporting. Designed especially for students who are to write thesis or lesser reports.

783. Problems in Industrial Education. (IE 783 Problems) (3-0) Credit 3. I and II. Conferences and advisement in selection and preparation of an acceptable term paper or essay. Prerequisite: I. E. 763.

792-3-4. Thesis in Industrial Education. (IE 792-3-4 Thesis) (2-0) (3-0) (4-0) Credit 2, 3 or 4. Conferences and advisement in relationship to the selection and preparation of an acceptable thesis for the Master of Science Degree. Prerequisite: I. E. 763.



Prairie View Agricultural and Mechanical College of Texas

ADMINISTRATIVE OFFICERS (Executive Cabinet)

EDWARD B. EVANS, V.M.D., Sc.D., President of the College

JESSE M. DREW, Ed.D., Dean of Instruction, Dean of Graduate School

ORESTES J. BAKER, M.L.S., Librarian

ARTHUR N. FEARING, B.A., Lieutenant Colonel, PMS, and Commandant, Reserve Officers Training Corps

MRS. ROSE E. HYNES, M.S., Dean of School of Nursing

JONEL L. BROWN, Ph.D., L.L.D., Director of Extramural Services

A. E. ADAMS, B.S., Acting State Leader, Extension Service for Negroes

THOMAS P. DOOLEY, Ph.D., Dean of School of Arts and Sciences

MRS. R. L. BLAND EVANS, M.S., Dean of Women

HARRY E. FULLER, Dean of Men

MISS FLOSSIE M. BYRD, Ph.D., Dean of School of Home Economics

GEORGE R. RAGLAND, Ph.D., Acting Registrar

HORACE D. MURDOCK, M.B.A., Business Manager

GEORGE L. SMITH, M.S., D.Ed. (Honoris Causa), Dean of School of Agriculture

THOMAS R. SOLOMON, Ph.D., Director of Student Life

ALVIN I. THOMAS, Ph.D., Dean of School of Industrial Education and Technology

CLAUDE L. WILSON, M.E., M.S., Dean of School of Engineering

OTHER ADMINISTRATIVE OFFICERS

JACOB L. BOYER, M.A., M.S., Manager, Dining Hall

NATHANIEL C. HARDEN, M.S., Manager, College Exchange

W. VAN JOHNSON, A.B., B.D., Executive Secretary, YMCA and YWCA

ARLIE E. LeBEAUX, Acting Physical Plant Superintendent of Maintenance Department

EMORY R. OWENS, M.D., Assistant to Resident Physician

HAROLD A. PERKINS, B.S., Superintendent of Buildings and Grounds

C.D. YANCY, M.S., Director, Interscholastic League and Placement Bureau

S. C. WALKER, M.D., Resident Physician

CURTIS A. WOOD, Ed.,D., Director, Office of Information

TEXAS AGRICULTURAL EXPERIMENT STATION SUB-STATION NO 18

JOHN C. WILLIAMS, M.S., Professor and Superintendent

ROSCOE W. LEWIS, Ph.D., Professor

OLIVER E. SMITH, M.S., Assistant Professor

JOHNNIE J. WOODS, M.S., Assistant Professor

MEMORIAL CENTER . . . Offers excellent Air Conditioned facilities for social and recreational activities. Houses the Center Director and Alumni Offices.

Officers of Instruction, 1964-65

DREW, JESSE MONROE (1943) ....Dean of College, Dean of Graduate School
B.S., Lincoln University, 1929; M.S.; Kansas University 1939; Ed.D., Harvard University, 1944.

ADAMS, WILLIE L. (1964) .....Drafting
B.S., Prairie View A & M College, 1961.

ALLEN, MISS SALLY O. (1964) .....Music
B.A., Furman University, 1941; M.A., Peabody College, 1942; Specialist, Columbia Teachers College, 1952; Indiana University, 1956-58.

ANDERSON, HOLMES EDISON, SR. (1958) .....Music
B.S., Prairie View A & M College, 1938; M.A., University of Iowa, 1941; Specialist Diploma, Columbia University, 1947; Ph.D., University of Iowa, 1957.

ANDERSON, JAMES A. (1964) .....Electrical Engineering
B.S.E.E., Prairie View A & M College, 1963; Completed requirements for M.S.E.E., University of Wisconsin, 1964.

ANDOH, CHRISTIAN K. (1965) ..... Architectural Engineering
B.Arch, Engr., Chicago Tech., 1963; M.R.P., Kansas State University, 1965.

ARMSTEAD, MRS. LADELLE MARIE (1957) .....Business Administration
B.S., Arkansas A.M.&N. College, 1957; M.B.A., Marquette University, 1958; Indiana University, Summer 1960; University of Wisconsin, Fall 1961-62.

ARMSTRONG, NOBLE B. (1964) .....Education
A.B., University of Florida, 1922; M.A., ibid., 1930; Ph.D., George Peabody College for Teachers, 1932; University of Houston, 1963-64.

ASHLEY, MISS DOLORES B. (1964) .....Home Economics
B.S., Tuskegee Institute, 1951; M.S., University of Wisconsin, 1956; European Education Tour, 1960.

BAKER, ORESTES J. (1931) Head, Department of Library Service Education
A.B., Morehouse College, 1930; B.L.S., Hampton Institute, 1931; M.L.S., Columbia University, 1936.

BATIE, CLARENCE M. (1960) .....Economics
B.A., Prairie View A & M College, 1959; M.A., ibid., 1960.

BATTLE, JOSEPH R. (1960) .....Commercial Foods
B.S., Tuskegee Institute, 1941; M.S., Texas Southern University, 1949.

BEASON, MRS. ELINOR C. (1961) .....English
B.A., Bishop College, 1948; M. A., New York University, 1960; University of Kansas City, Summer 1960, 1960-61.

BELL, MRS. BILLIE SIMMONS (1957).....Nursing
B.S. in N.E., Prairie View A & M College, 1957; R.N., 1957.

BELL, WILLIE JAMES (1949) .....Printing
Certificate in Printing, Prairie View A & M College, 1947; Certificate in Mechanism of the Linotype Machine, Mergenthaler Linotype School, 1951; B.S. in Ind.Ed., Prairie View A & M College, 1959; ibid., 1960-61, Summer 1961.

BERRY, JEWEL E. (1956) .....Biology
A.B., Fisk University, 1951; M.A., ibid., 1953; Ph.D., Notre Dame University, 1956.

BOND, HORACE J. (1958) .....English
B.A., Indiana University, 1953; M.A., ibid., 1954.

BOYDEN, LLOYD R. (1957) .....Plumbing
Certificate in Plumbing and Heating, Hampton Institute, 1950; B.S., ibid., 1952; M.A., New York University, 1959.

BREAUX, MRS. ELOIS MARIE (1956, 1964) .....Nursing
B.S., Dillard University, 1949; R.N., 1949; M.A., New York University, 1956.

BROOKINS, TERRY M. (1956, 1960) .....Business Administration
B.A., Morehouse College, 1947; A.M., University of Pennsylvania, 1949; New York University, Summers 1953, 1955; University of Texas, 1958-59, 1959-60.

BROUSSARD, MISS MAMIE J. (1957) .....Romance Languages
A.B., Xavier University, 1943; M.A., Atlanta University, 1945; University of California, Summer 1948; Louisiana State University, Summer 1952, 1962-63, 1963-64; University of Texas 1956-57.

BROWN, JONEL LEONARD (1943) .....Head, Department of Economics
Director of Extramural Services
B.A., Morehouse College, 1930; M.A., University of Wisconsin, 1942; Ph.D., ibid., 1946.

BURDINE, MISS DOROTHY I. (1933, 1938) .....Education
A.B., Colorado State College of Education, 1927; A.M., ibid., 1933; University of Denver, Summers 1947, 1951, 1958, 1960, 1962.

BURRELL, MRS. PEARLINE K. (1963) ..... Physical Education
B.S., Prairie View A & M College, 1949; M.Ed., ibid., 1955; Summers 1962, 1963; University of Houston, Summer 1964.

BYRD, MISS FLOSSIE MARIAN (1962) ..... Dean, School of Home Economics
B.S., Florida A. and M. University, 1948; M.Ed., Pennsylvania State University, 1954; Ph. D., Cornell University, 1963.

CALHOUN, MISS ALLY F. (1964) ..... Political Science
B.A., Grambling College, 1963; M.A., Atlanta University, 1964.

CAMPBELL, MISS ANNIE LUCILLE (1932) ..... Head, Department of English
B.A., Bradley University, 1930; M.A.; Northwestern University, 1935; Ph.D., New York University, 1956.

CARTER, PURVIS, M. (1956) ..... History
A.B., Tillotson College, 1948; M.A., Howard University, 1950; University of Denver, Summers 1954, 1955; University of Colorado Summers 1960, 1961, 1962, 1963, 1964.

CHARLESTON, CUBE (1953) ..... Printing
Certificate in Printing, Prairie View A & M College, 1951; Certificate in Linotype Operation, Mergenthaler Iinotype School, 1953; B.S. in Ind. Educ., Prairie View A & M College, 1961.

CHRISTOPHER, CLYDE (1963) ..... Mathematics
B.S., Prairie View A & M College, 1950; M.A., Texas Southern University, 1960; University of Kansas, 1960-61.

CLARKSON, MISS AMELIA L. (1958) ..... Nursing
B.S., Meharry Medical College, 1953; R.N., 1953, University of Texas, 1956-57.

CLAY. MISS BARBARA JEAN (1961) ..... History
B.A., Xavier University, 1958; M.A., Howard University, 1960.

COBB, MRS. YVONNE B. (1962) ..... English
B.A., Prairie View A & M College, 1951; M.A., ibid., 1957; Advanced Study, North Texas State University, 1963.

COBBS, DAVID E. (1963) ..... Music
B.S., Tennessee State University, 1961; M. Mus., University of Michigan, 1962; ibid., Summer 1964.

COLEMAN, ALVIN E. (1956) ..... Biology
B.S., West Virginia State College, 1948; M.S., Michigan State University, 1955; Tulane University, Summer, 1963.

COLEMAN, MRS. ZELIA S. (1947) ..... Household Eco.-Home Management
B.S., Bishop College, 1930; B.A., Prairie View A & M College, 1938; Adult Education Courses, ibid., Summers 1939, 1940; M.S., Kansas State College, 1943; University of Wisconsin, Summers 1948, 1949, 1950; University of California, Summer 1952; M.A., Prairie View A & M College, 1954; University of Pennsylvania, 1955; Ohio State University, Summers 1956, 1957, 1958, 1959; In service Course, Prairie View A & M College, Summers 1960, 1961, 1962, 1963.

COLLINS, LIMONE C. (1953) ..... Chairman, Biology Section
Natural Science Department
B.S., Prairie View A & M College, 1947; M.S., ibid., 1953; University of Texas, Summers 1954, 1955, 1956, 1958; Ph.D., University of Iowa, 1961.

COLLINS, SAMUEL (1949) ..... Industrial Education
B.S., Prairie View A & M College, 1949; M.S., ibid., 1953; Ed.D., University of California at Los Angeles, 1962.

COOKSEY, MRS. DYMPLE C. (1964) ..... Home Economics
B.S., Oklahoma State University, 1958; M.S., ibid., 1964.

CORUTHERS, JOHN M. (1937) ..... Agricultural Economics
B.S., Hampton Institute, 1925; M.S., University of Wisconsin, 1928; Ph.D., Cornell University, 1934; University of California, Summer 1954.

COSS, MRS. CARRIE BELL (1946) ..... Psychology
A.B., Howard University, 1926; B.E., University of Cincinnati, 1927; University of Pennsylvania, Summer 1928; University of Cincinnati, Summer 1931; M.A., Columbia University, 1940; ibid., Summer 1951; University of Texas Summer 1955; Denver University, Summer 1959.

COURSEY, BURNETT B. (1961) ..... Economics
B.A., Prairie View A & M College, 1954; M.A., ibid., 1959; University of California, Summers 1961, 1962.

DANIELS, JILES P., Captain (1964) ..... Assistant
Professor of Military Science
B.S., Prairie View A & M College, 1954; Basic Infantry Officers Course, 1955; CBR Course, 1956; Associate Field Artillery Battery Officers Course, 1960; Nuclear Assembly Course, 1960; Battery Officers Career Course, 1962; Intelligence Staff Officer Course, 1963; Special Vietnamese Language Course, 1963.

DANIELS, JOSEPH A. (1962) ..... Music
B.S., Tennessee A. & I. State University, 1954; M.S., ibid., 1960.

DAVIS, MRS. FRANCES JOSEPHINE (1962, 1964) ..... Library Service
B.S., Tennessee A & I State University, 1943; M.S., Atlanta University, 1952.

DEVER, WAYMAN T. (1964) ..... Education
B.A., Samuel Huston College, 1946; M.S.Ed., Texas Southern University, 1950; Ed.D., North Texas State University, 1964.

DOGGETT, DAVID V. (1963) ..... Mathematics
B.S., Prairie View A & M College, 1959; M.S., ibid., 1963.

DOOLEY, THOMAS P. (1934) ..... Dean, School of Arts and Sciences
B.A., Morehouse College, 1927; M.S., University of Iowa, 1931; Ph.D., ibid., 1939.

DOUGLAS, MRS. MELBA J. (1958) ..... Business Education
A.A., St. Phillips Junior College, 1947; B.A., Texas Southern University, 1949; M.A., ibid., 1958; University of Minnesota, Summer 1959; University of St. Mary's, Summer 1960; Oklahoma State University, 1963-64.

DUNSON, ALVIS A. (1954) Head, Department of Modern Foreign Language
A.B., Morehouse College, 1929; M.A., Columbia University, 1934; Certificate, University of Berlin, 1937; Ph.D., Ohio State University, 1954.

EATON, GEORGE T. (1964) ..... Political Science
A.B., Duke University, 1960; M.A., Yale University, 1961; University of Paris (Sorbonne) 1963-64.

EATON, MRS. HELEN M. (1964) ..... Business Administration
B.S., St. Joseph College, 1953; Loyola College, 1956-61.

ECHOLS, JACK W. (1954) ..... Director of Teacher Education
Head, Department of Education
B.S., Prairie View A & M College, 1934; M. S., ibid., 1951; Ed.D., University of Denver, 1954.

EDMOND, MISS THETIS CHARLENE (1962) ..... English
B.A., Huston-Tillotson College, 1956; Prairie View A & M College, Summers 1959-63; M.A., ibid., 1964.

EDWARDS, CHARLES T., JR. (1957) ..... Masonry
Certificate in Trowell Trades, Hampton Institute, 1952; B.S., ibid., 1954; M.S., Kansas State College, 1960; University of Missouri, Summer 1962; University of Houston, Summer 1963.

ENGRAM, LEWIS W. (1948) ..... Dairy Husbandry
B.S., Hampton Institute, 1940; M.S., Michigan State University, 1946; University of Minnesota, Summer 1956.

EPPS, MARTIN (1963) ..... Physical Education
B.S., Fisk University, 1958; M.S., Indiana University, 1963.

FEARING, ARTHUR N., Lieutenant Colonel, Infantry (1963) ..... ROTC
Commandant, Professor of Military Science
B.A., University of Maryland, 1963; A.A., George Washington University (D. C.), 1960; Basic Infantry Officers Course, U. S. Army Infantry School, 1941; Associate Infantry Officer Advance Course, U. S. Army Infantry School, 1955; U. S. Army Command and General Staff College, 1960.

*FERGUSON, WILLIAM C. (1958) ..... Head, Department of Business
Education and Administration
B.S.C., University of Iowa, 1932; M.A., ibid., 1942; Ph.D., ibid., 1962.

FEWS, MISS ROSETTA C. (1963) ..... Business Education
B.S., Morgan State College, 1961; M.A., New York University, 1962.

FONTENOT, DEWEY (1958) ..... Automobile Mechanics
B.S., Southern University, 1954; Certificate, Sun Electric Corporation 1954; Certificates General Motors Corporation, 1955, 1956, 1957, 1959; M.S., Bradley University, 1961; Certificate, Chrysler Corporation, 1962; Certificate, Perfect Circle Corporation, 1962; Certificates General Motors Corporation, 1964.

FOSTON, ARTHUR L. (1961) ..... Industrial Education
B.S., Prairie View A & M College, 1948; M.S., ibid., 1950; ibid., Summer 1953; North Texas State University, Summer 1956; M.A., Colorado State University, 1961; University of Houston, Summer 1964.

FRANCIS, LUTHER V. (1950) ..... General Engineering
B.S., Prairie View A & M College, 1950; M.S., ibid., 1952.

FRANKS, WILLIAM, JR. (1961) ..... Business Administration
B.S., Prairie View A & M College, 1956; M.S., ibid., 1960; ibid., Fall 1960; University of Texas, Summer 1962.

FRAZIER, THELMA L., Major, Armor (1961) ..... Assistant Professor of Military Science
Arkansas A.M.&N. College, 1947-50; Associate Infantry Off. Course, 1950; USAREUR Signal School, 1952; Armor Off. Advance Course, 1955; US Army Intelligence School, 1962.

FRY, FRANCIS G., SR. (1962) ..... Profesor of Electrical Engineering
B.S. in E.E., Kansas State College, 1929; University of Michigan, Summers 1963, 1964.

GARNETT, MISS LILLIAN B. (1951) ..... Business Education
B.S., Emporia Teachers College, 1936; M.S., ibid., 1951.

GARRETT, CONALLY SHELTON (1948) ..... Music
B.A., Prairie View A & M College, 1943; M. Mus., New England Conservatory of Music, 1948; Harvard University, Summers 1949, 1950, 1951, 1952; Eastman School of Music, Summer 1954; Private Piano Study with Albert Hirsch, 1958-59, 1959-60, 1960-61.

GIBSON, MRS. KATHRYN SNELL (1953) ..... Education
Modern Kindergarten Training School, 1935; B.A., Wiley College, 1941; M.A., Columbia Teachers College, 1947; ibid., 1951, 1956-57.

GIBSON, ROBERT E. (1963) ..... Science Education
B.S., Alcorn A & M College, 1942; M.A., Northwestern University, 1950; ibid., 1958-61; Illinois Institute of Technology, 1962.

GLENN, MILTON A. (1952) ..... Woodwork
B.S., Kansas State Teachers College, 1950.

GOOD, SAMUEL MANSEL (1961) ..... Mathematics
B.S., South Carolina State College, 1957; M.S., Atlanta University, 1961.

GORDON, ALLAN M. (1964) ..... Art Education
B.A., Langston University, 1955; M.A., Sacramento State College, 1962; ibid., Summer 1964.

GRAY, FREDERICK RUSSELL (1962) ..... Mathematics
A.B., Talladega College, 1959; M.S., Atlanta University, 1962.

GREAUX, AUSTIN E. (1951) ..... Architectural Engineering
B.Arch., The Catholic University of America, 1950; ibid., 1950, 1951.

GREENE, JESSE W., Staff Sergeant, Infantry (1962) .... Operations Instructor Military Science Department
Prairie View A & M College, 1953-55; I Corps (Group) Non-commissioned Officers Academy, 1957; Army Motion Picture Projectionists Course, 1958; USAFE/USAREUR Air-Ground Operations Course, 1960; Smallbore Marksmanship Course, 1963.

GRIMES, JOSEPH L. (1963) ..... Education
A.B., Music and Arts College, 1950; M.S., Indiana University, 1957; ibid., 1960-63.

GUIDRY, MRS. MARY LEE (1963) ..... Nursing
Diploma, General Hospital #2 School of Nursing, 1950; R.N., 1950; B.S., Sacred Heart Dominican College, 1962.

HACKNEY, MRS. ALBERTA MARIE (1961) ..... Nursing
B.S., Texas Southern University, 1953; B.S., Prairie View A & M College, 1958.

HALL, WALTER J. (1950-52, 1965) ..... Industrial Education
B.S., Kansas State Teachers College, 1940; M.Ed., Prairie View A & M College, 1960; ibid., (in service courses), 1963-64.

HASHMI, ZIA R. (1965) ..... Physics
B.S., Osmania University, India, 1953; M.S., Kansas State College, 1961.

HEBERT, THOMAS L. (1965) ..... English
B.A., Linfield College, 1960; Advanced Study, Baylor University, 1961-65.

HENDERSON, MISS EZRA L. (1960, 1963) ..... Business Administration
B.A., Prairie View A & M College, 1952; M.A., ibid., 1958; North Texas State University, Summer, 1963.

HENRY, MARION (1956) ..... Audio-Visual Education
B.S., Southern University, 1952; M.S., Bradley University, 1953; Michigan State University, Summer 1961.

*HIGGS, MRS. OLIVETTE JACKSON (1956) ..... Romance Languages
B.A., Arkansas A.M.&N. College, 1954; M.A., Atlanta University, 1956; E.S.P.P.P.F.E. de la Sorbonne, Summer 1959; University of Colorado, Summers, 1960, 1962.

HODGE, MISS NINA L. (1961) ..... English
B.A., Wiley College, 1955; M.A., State University of Iowa, 1961.

HOOD, MISS WILLIA (1954) ..... Romances Languages
A.B., Tillotson College, 1939; M.A., La Universidad Nacional de Mexico, 1949; Columbia Teachers College, 1953-54, ibid., summers 1954, 1955, 1956; Institute D'Etudes Francaises, Summer 1959; Ph.D., La Universidad Inter-Americana, 1962.

HOWELL, ERNEST R., Major, Infantry (1963) ..... Assistant Professor of Military Science
B.A., A & T College, 1953; The Associate Infantry Company Officers Course, 1953; Army Cold Weather Indoctrination and Ski Instructors' Course, 1959; The Infantry Officers Career Course, 1960-61; The U. S. Army Language School, 1962; Fourth U. S. Army MOI Course, 1963.

HOOKS, MRS. ESTELLE M. (1961 1963) ..... Nursing
B.S., Prairie View A & M College, 1961; R.N., 1961; M.S. in N.Ed,, Indiana University, 1963.

HUBBARD, MISS VIVIAN E. (1955) ..... Commercial Foods
B.S., Prairie View A & M College, 1952; M.S., Michigan State University, 1959.

HUNT, MRS. DELIA M. (1947) ..... Clothing and Home Economics Education
B.S., Prairie View A & M College, 1935; Kansas State College, Summers 1936, 1937; M.S., Prairie View A & M College, 1945; University of California, Spring and Summer 1946; Traphagen School of Fashion, 1951; Colorado A & M College Summers 1954, 1957; Prairie View A & M College, Summer 1959; European Travels Summers 1960, 1961; Teaxs Woman's University, Summer, 1963; Prairie View A & M College, Summer 1964.

HUNT, WALKER E. (1964) ..... Mathematics
B.A., University of Texas, 1960; M.A., ibid., 1962, 1962-64.

HYNES, MRS. ROSE E. (1955, 1960) ..... Dean, School of Nursing
B.A., Philander Smith College, 1942; Diploma Provident Hospital School of Nursing, 1954; R.N., 1954; M.S. in N.Ed., Indiana University, 1960.

JACKET, MISS BARBARA J. (1964) ..... Physical Education
B.S., Tuskegee Institute, 1958; Prairie View A & M College, Summers 1960, 1961.

JACKSON, EUGENE G. (1955) ..... Driver and Traffic Safety Education
B.S., Kansas State Teachers College, 1954; M.S., ibid., 1955; Certificate in Advanced Driver Education, Oklahoma A & M College, 1955; Certificate in Seminar for College Driver Education Teachers, 1956; ibid., 1959; University of Texas New York University, 1959-60; Michigan State University, Summer 1962.

JACKSON, MRS. MINNIE F. (1965) ..... English
B.A., Prairie View A & M College, 1964.

JACKSON, MRS. SOPHIA L. (1963) ..... Home Economics
B.S., Huston-Tillotson College, 1944; M.A., Columbia University, 1950; Huston-Tillotson College, Summers 1950, 1954; University of Texas, Summers 1960, 1956, 1957; Cornell University, Summer 1958; Texas Women's University, Summer 1964.

JASPER, MISS THOMASINE (1963) ..... Nursing
B.S., Prairie View A & M College, 1957; R.N., 1957.

JOHNSON, ERRIC J. (1957) ..... Agricultural Engineering
B.S., Prairie View A & M College, 1947; M.S., Iowa State College, 1955.

JOHNSON, MRS. EVLYN L. (1964) ..... Sociology
B.S., Samuel Huston College, 1952; M.A., University of Michigan, 1960; M.S., Prairie View A & M College, 1960.

JOHNSON, J. B. (1954) ..... Engineering
B.S.E.E., University of Texas, 1963.

JOHNSON, THOMAS L. (1962) ..... Mathematics
B.S., Paul Quinn College, 1949; M.S., Texas Southern University, 1951; University of Texas, 1951-52; University of Kansas, 1964.

JOHNSON, WINFRED V. (1958) ..... Sociology
A.B., Livingston College, 1949; B.D., Capitan University, 1958.

*JONES, EARL K. (1954) ..... Chemistry
B.S., Knoxville College, 1937; M.S., Virginia State College, 1949; Ohio State University, Summers 1952, 1953; Montana State College, Summer 1961; Washington University, 1961-62.

JONES, HARDING L. (1957) ..... Industrial Arts
B.S., Tennessee A & I University, 1951.

JONES, HERMAN T. (1947) ..... Education
A.B., University of Kansas, 1931; A.M., ibid., 1933; ibid., 1946; Summer 1951; University of Oklahoma, Summer 1956; Prairie View A & M College, 1960, Summer 1961.

JONES, MISS JANET E. (1961) ..... Romance Languages
B.A., University of Kansas, 1958; M.A., Mexico City College, 1961; University of Colorado, Summer 1962; Middlebury College, Summer 1963; University of Colorado, Summer, 1964.

JORDAN, MISS KATHRYN NELL (1951) ..... Music
B.A., Langston University, 1945; Northwestern, Summers, 1946, 1947; M.A., State University of Iowa, 1949; ibid., Summer 1956; European Music Festivals, N.E.A (University of Indiana), 1961.

JUSTICE, IRVING E. (1963) ..... Mathematics
B.S., Prairie View A & M College, 1956; M.S., ibid., 1962.

KIRKWOOD, JAMES I. (1953) ..... Soil Science
B.S., Kansas State University, 1952; M.S., ibid, 1953; Ph.D. Michigan State University, 1962.

KYNARD, ALFRED T. (1953) ..... Teacher Trainer
Trade and Industrial Education
B.S., Hampton Institute, 1950; M.A., New York University, 1951; Ed.D., University of California, 1960.

LAWSON, MONROE W. (1964) ..... Education
B.S., Prairie View A & M College, 1946; M.Ed., Texas Southern University, 1954.

LEDBETTER, MRS. FRANKIE B. (1952) ..... English
A.B., Bishop College, 1935; M.A., University of Colorado, 1952; ibid., Spring 1951-52; Summers, 1953, 1958, 1959, 1963; University of Indiana, 1964.

LEWIS, EARL M. (1953) ..... Head, Department of Political Science
A.B., Tougaloo College, 1942; A.M., Loyola University, 1948; Ph.D., University of Chicago, 1951.

LEWIS, MRS. HAZELYN D. (1953-56, 1963) ..... English
B.A., Spelman College, 1952; M.A., Atlanta University, 1955.

LEWIS, ROSCOE W. (1955) ..... Animal Nutrition and Biochemistry
B.S., Prairie View A & M College, 1939; M.S., Kansas State College, 1952; Ph.D., ibid., 1955.

LUKE, CHEN-TIEN (1964) ..... Engineering
B.S., Marietta College, 1953; B.S., Massachusetts Institute of Technology, 1956; M.S., ibid., 1959.

McBRIDE, MISS MAXINE (1944-50, 1964) ..... Modern Foreign Languages
B.A., Kansas University, 1937; M.A., ibid., 1941; University of Minnesota, Summer, 1942; National University of Mexico, 1950; Kansas University, 1951; McGill University, Summer 1956.

McCANN, PRINCE V. (1959) ..... Chemistry
B.S., Prairie View A & M College, 1956; M.S., ibid., 1964.

McCARY, HENRY (1963) ..... Industrial Arts
B.S., Langston University, 1942; M.S., Kansas State College, (Pittsburgh), 1952.

McGHEE, LARRY C. (1956) ..... Mechanical Drawing
B.S. in Ind.Educ., Southern University, 1955.

McKINNIS, HUGH L. (1950-56, 1963) ..... Physical Education
B.A., Indiana University, 1949; M.S., ibid., 1950.

*McMILLAN, LEMMON C. (1946) ..... Registrar
B.A., Prairie View A & M College, 1939; M.A., ibid., 1951; University of Texas, Summers 1951, 1952. 1953-54, Summer 1954.

MACK, JOSEPH (19) ..... Industrial Arts
B.S., Hampstom Institute, 1943; M.S., Pennsylvania State University, 1949.

MARTIN, EDWARD W. (1952) ..... Biology
A.B., Fisk University, 1950; M.A., Indiana University, 1952; Ph.D., State University of Iowa, 1962.

MATTHEW, ANDREW (1959) ..... Electricity
B.S., Tuskegee Institute, 1958; R.C.A. Institute, 1959; M.S., Kansas State College, 1963.

MILES, ELIJAH W. (1957) ..... Political Science
B.A., Prairie View A & M College, 1955; M.A., Indiana University, 1960; Ph.D., ibid., 1962.

MOORE, DONALD E. (1964) ..... Architectural Engineering
B.S., Hampton Institute, 1964.

MOORE, LEROY G., JR. (1956) ..... Physical Education
B.S., Langston University, 1948; M.S., Colorado State College of Education, 1949; ibid., Summers 1950, 1951; University of Colorado, Summer 1960; Colorado State, 1963-64.

MOORING, MRS. KITTYE D. S. (1962) ..... Business Education
B.A., Prairie View A &M College, 1953; M.S., ibid., 1960; University of Houston, Summers 1963, 1964.

MORRIS, MRS. EMMA DELL (1962) ..... Physical Education
B.S., Huston-Tillotson College, 1955; M.S., Prairie View A & M College, 1958.

MOTEN, MRS. OLLIE FOREMAN (1960) ..... Nursing
Diploma, Kansas City General Hospital School of Nursing, 1955; R.N., 1955; B.S., Prairie View A & M College, 1960; M.Ed. ibid., 1963.

MURPHY, MRS. EDWINA (1964) ..... English

MURPHY, JOHN B. (1959) ..... Education
B.S., Prairie View A & M College, 1943; M.S., Kansas State College, 1946; Ph.D. University of Texas, 1959.

NICHOLAS, C. H., (1943, 1963) ..... Biology
A.B., Talladega College, 1930; M.S., University of Michigan, 1939; Columbia University, Summer 1934; Atlanta University Workshop, Summer 1941; Chicago University, Summer 1947, 1947-48, Summers 1948, 1949.

NICKS, WILLIAM JAMES (1945) ..... Head, Department of Physical Education and Director of Athletics
B.S., Morris Brown College, 1928; M.A., Columbia University, 1941.

NORRIS, MRS. ANNIE R. (1963) ..... Nursing
B.S., Jackson State College, 1945; Diploma, Lincoln School of Nursing, 1954; R.N., 1954; M.S., University of Colorado, 1959.

NORRIS, EARNEST MISHAEL (1927-29, 1937) ..... Agricultural Education
B.S., Prairie View A & M College, 1927; M.S., Cornell University, 1931; Ph.D. ibid., 1934.

O'BANION, ELMER E. (1939) ..... Head, Department of Natural Sciences .... Chairman, Chemistry Section
A.B., Indiana University, 1934; M.A., ibid., 1935; Ph.D. ibid., 1942.

OLIVER, PEDRO A. (1964) ..... Physics
B.S., Matanzas Institute, 1944; M.S., Havana University, 1948; Ph.D. ibid., 1949; ibid., Summer, 1950; Texas A&M University, Summers 1963, 1964.

OUTLY, MRS. ERNESTINE L. (1957) ..... Child Development
A.B., Tillotson College, 1947; M.S., in Home Economics, Texas Southern University, 1953; ibid., 1954; Merrill-Palmer School, Summer 1957; University of Wisconsin, Summer 1958; Colorado State University, Summer 1959; University of Wisconsin, Summer 1960; Texas Southern University, Summer 1962.

OWENS, EMIEL W. (1948, 1952) ..... Economic Horticulture
B.S., Prairie View A & M College, 1947; M.S., ibid., 1952; Ph.D., Ohio State University, 1952; Case Institute of Technology, Summer 1955; University of California "Guest Scholar," 1961; Rutgers University "Guest Scholar," Summer, 1964.

PAYNE, JAMES S. (1958) ..... History
B.A., Prairie View A & M College, 1952; M.A., University of Denver, 1957; Northwestern University, Summer 1961.

PERRY, MERVIN E., Captain, Quartermaster (1963) ..... Assistant Professor of Military Science
B.S., Prairie View A & M College, 1956; The Quartermaster Officers Basic Course, 1956; The Associate Infantry Company Officers Course, 1959; The Quartermaster Career Course, 1963.

PETERSON, ALANDRUS A. (1956) ..... Dry Cleaning and Tailoring
Certificate, Summer 1947, Prairie View A & M College; B.S., ibid., 1952; M.S., ibid., 1962.

PHILLIPS, JOSEPH R. (1961) ..... Engineering
B.S., Prairie View A & M College, 1949; M.S., ibid., 1955; Summer 1962, University of Utah.

PHILLIPS, LEE C. (1932) ..... Education, College Chaplain
B.S., Prairie View A & M College, 1928; B.D., Howard University, 1931; Union Theological Seminary, 1931-32; M.A., Howard University, 1939; Educational Seminar (European Travel), 1952 and 1955; Union Theological Seminary, Summers 1959, 1960, 1961, 1962, 1963, 1964.

POINDEXTER, ALFRED N. (1945) ..... Veterinary Science
D.V.M., Kansas State College, 1945; K. State University, Summer 1960.

POWELL, JOHN R. (1951) ..... Agricultural Education
B.S., Prairie View A & M College, 1937; M.S., ibid., 1948; Ohio State University, Summer, 1963.

PRESTON, MRS. ANNIE C. (1934-44, 1945) ..... Education
B.S. in Elem. Educ., Virginia State College, 1931; M.A., Columbia University, 1932; Certificate in Curriculum and Teaching, 1939; Denver University, Summer 1946; Temple University, 1951; University of Puerto Rico, Summer 1958; Temple University (Reading Clinic), 1959; Arizona State University, 1960; Minnesota, 1962.

PRICE, RICHARD L. (1956) ..... Mathematics
B.S., Prairie View A & M College, 1955; M.S., University of Texas, 1958; Iowa State University of Science and Technology, Summer 1959; University of Texas, Summer 1960; UCLA, Summer 1961; The Ohio State University, 1961-62, 1962-63.

RAGLAND, GEORGE R. (1955) ..... Head, Department of Sociology
B.S., Langston University, 1938; M.A., State University of Iowa, 1939; Ph.D. ibid., 1953; ibid., Summer 1958.

RANDALL, ALBERT W. (1923) ..... Mathematics
B.S., Alcorn A & M College, 1916; A.M., Universty of Colorado, 1929; ibid., Summers 1929, 1937, 1940; State University of Iowa, Summer 1934; Ohio State University, Summer 1945.

RAO, SHANKARANARAYANA R. N. (1964) ..... Associate Professor of Civil Engineering
B.E., University of Mysore, India, 1946; M.E., University of Roorhee, India, 1958; M.S., University of Connecticut Shorrs, 1961; Ph.D., Rutgers-The State University of N. J., 1964.

REID, WILLIM E. (1954) ..... Chemistry
B.S., North Carolina A & T College, 1948; M.S., North Carolina College, 1953.

RETTIG, EOLUS V. (1953) ..... Physical Education
B.S., Wilberforce University, 1934; M.S., Prairie View A & M College, 1953.

RICHARDSON, LEE VAN (1958) ..... Chemistry
B.S., Prairie View A & M College, 1953; M.S., ibid., 1958; University of Texas, Summer, 1959; Washington State University, Summer 1962.

ROBERTSON, ALFRED (1963) ..... Political Science
B.A., J. C. Smith University, 1962; M.A., Atlanta University, 1963.

SINKLER, GEORGE (1955) ..... History
A.B., Augustana College, 1953; M.A., Teachers College, Columbia, 1954; ibid., 1957-59; ibid., 1961-62.

SMITH, MRS. DAISY L. (1964) ..... Sociology
B.S., Livingston College, 1961.

SMITH, GEORGE L. (1931) ..... Dean, School of Agriculture
B.S., Hampton Institute, 1929; M.S., Kansas State College, 1941; ibid., 1940-41; E.Ed., (Honoris Causa), University of Liberia, 1958.

SMITH, HUBERT D. (1952) ..... English
B.A., Texas Southern University, 1948; M.A., New York University, 1952; Columbia University, Summer 1959.

SMITH, OLIVER EMMIT (1949) ..... Agronomy
B.S., Prairie View A & M College, 1947; M.S., University of Nebraska, 1949.

SMITH, MRS. VIVIENNE H. (1958) ..... English
A.B., Wiley College, 1934; M.A., Atlanta University, 1937; Columbia University, 1946-47, Summers 1947, 1948, 1956, 1959, 1960, 1961.

SOLOMON, THOMAS R. (1939) ..... Political Science
A.B., Wayne University, 1929; M.S. ibid., 1933; Ph.D., University of Michigan, 1939.

SPALDING, SIDNEY W. (1944) ..... English
A.B., Eureka College, 1929; A.M., University of Illinois, 1930; University of Michigan, 1933-34, 1937-38, 1938-39, 1951; University of Colorado, Summer 1955; Columbia University, Summer 1959; University of Colorado, Summer 1963.

STAFFORD, GEORGE H. (1955-56, 1957-61, 1963) ..... Education
B.S., Prairie View A & M College, 1948; M.Ed., ibid., 1952; Ed.D., Cornell University, 1957.

STEWART, A. D. (1954) ..... Mathematics
A.B., Howard University, 1950; M.S., ibid., 1949; University of Wisconsin, 1951-52, 1952-53, 1953-54; Ph.D., University of Texas, 1964.

STICKNEY, WILLIAM H. (1945) ..... Printing
Diploma and Certificate in Printing, Alabama A & M Institute, 1924; Mergenthaler Linotype School, Summer 1925; Colorado State College, Summer 1931; Carnegie Institute of Technology, Summer 1933; Regular Session 1934-35.

STUBBLEFIELD, CEDRIC T. (1954) ..... Chemistry
B.S., Texas Southern University, 1942; M.S., Prairie View A & M College, 1947; Ph.D., State University of Iowa, 1954.

TATUM, CHARLES E. (1953-54, 1957-58, 1959-60, 1963) ..... Economics
B.A., Prairie View A & M College, 1952; M.Ed., ibd., 1953; University of Maryland, Fall 1958; M.S., Indiana University, 1959; ibid., Summer 1960, Fall 1961.

TAYLOR, MRS JIMMIZINE B. (1945) ..... Library Service Education
B.A., Arkansas State College, 1940; B.S.S., Atlanta University, 1943.

THOMAS, ALVIN IGNACE (1949) ..... Dean, School of Industrial Education
B.S., Kansas State College, Pittsburg, 1948; M.S., ibid., 1949; Pennsylvania State University, Summer 1951; Ph.D., Ohio State University, 1957; University of Michigan, Summer 1963.

THOMAS, MRS. IRIS B. (1949-50, 1963) ..... Modern Foreign Language
B.A., Dillard University, 1944; M.A., Middlebury College, 1948; McGill University, Summer 1944; Ohio State, 1951.

THOMPSON, MRS. ORA M. (1965) ..... Home Economics
B.S., Prairie View A & M College, 1939; M.S., ibid., 1946.

THORNTON, MRS. EVELYN E. (1958) ..... Mathematics
B.S., Texas Southern University, 1954; M.S., ibid., Iowa State University, Summer, 1959, 1960; University of California at Los Angeles, Summer 1962.

TOLIVER, JOE W. (1963) ..... Electrical Engineering
B.S., Prairie View A & M College, 1962.

TOYE, JOHN E., Captain, Armor (1963) ..... Assistant Professor of Military Science
B.S., Morgan State College, 1957; The Armor Officers Basic Course, 1958; The CBR Course, 1959; Maintenance Officers Orientation Course, 1959; The Armor Officers Career Course, 1963.

URDY, CHARLES E. (1963) ..... Chemistry
B.S., Huston-Tillotson College, 1954; Ph.D., University of Texas, 1962.

VON CHARLTON, RUDOLPH EVERETT (1942) Head, Department of Music
B.S., Hampton Institute, 1931; M.Mus., University of Michigan, 1939; Ph.D., Columbia University, 1948.

WARD, CLIFFORD LOUDIN (1951) ..... Biology
B.S., Ohio State University, 1935; M.S., ibid., 1936; ibid., 1936-37, 1937-38, Summers 1948, 1949, 1951; Cornell University, Summer 1956; University of North Carolina, Summer 1964.

*WEATHERSPOON, LINDSEY (1953) ..... Animal Husbandry
B.S., Georgia State College, 1948; M.S., Kansas State College, 1953; University of Wisconsin, Summer 1960.

WEAVER, MRS. ELLA W. C. (1942) ..... Music
B.A. in Music, Philander Smith College, 1940; M.A. in Mus., Boston University, 1942; University of Michigan, Summers 1945, 1948, 1949; Boston University, 1953; University of Michigan, Summer 1959.

*WEAVER, LEROY C. (1952) ..... Art Education
B.A., Morehouse College, 1943; B.F.A., Art Institute of Chicago, 1947; M.A., State University of Iowa, 1957.

WHITE, MRS KEY ATLAS (1963) ..... Physical Education
B.S., Prairie View A & M College, 1950; M.S., Texas Southern University, 1964.

WILLIAMS, CHARLES R. (1964) ..... Economics
B.A., Southern University, 1961; M.A., University of Illinois, 1964.

WILLIAMS, ERNEST P. (1953) ..... English
A.B., Morehouse College, 1950; M.A., State University of Iowa, 1952; University of Texas, Summer 1958; University of Colorado, Summer 1961, 1962.

WILLIAMS, MRS. HAZEL M. (1964) ..... English

WILLIAMS, JOHN CALVIN (1940) ..... Animal Husbandry
B.S., Hampton Institute, 1932; M.S., Kansas State College, 1940; ibid., 1948-49, Summer 1949.

WILLIFORD, DONALD E., Captain, Infantry (1962) ..... Assistant Professor of Military Science
B.S., Temple University, 1956; The Basic Infantry Officer Course, 1956; The Infantry School Airborne Course, 1957; U. S. Army Aviation School, 1957-58; Seventh U. S. Army Troop Information Instructor Course, 1959; U. S. Army Europe Air-Ground Operations School, 1959; Seventh U. S. Army CBR School, 1960; Armor Officers Advanced Course, 1961-62.

WILSON, CLAUDE L. (1925) ..... Dean, School of Engineering
B.S. in M.E., Kansas State University, 1925; M.E., ibid., 1929; M.S., ibid., 1933; Michigan State University, Summer 1951; University of Minnesota, Summer 1956; (Reg. Prof. Engr.); Massachusetts Institute of Technology, Summer 1962; George Washington University, Summer 1963.

WILSON, MISS SEDALIA (1954) ..... Nursing
Diploma, Prairie View A & M College, 1925; R.N., 1926; Certificate in Public Health, Medical College of Virginia, 1940; B.S., Prairie View A & M College, 1954; M.N., University of Washington, 1957.

WILSON, URAL (1958) ..... Mathematics
B.S., Huston-Tillotson College, 1948; M.S., North Texas State Teachers College, 1958.

WOOD, CURTIS A. (1947) ..... Health Education
A.B., Knoxville College, 1938; M.A., Columbia University, 1946; Ed.D., ibid., 1956.

WOODS, JOHNNIE J. (1945) ..... Poultry Science
B.S., Prairie View State College, 1938; ibid., Summer 1944; M.S., Kansas State College, 1948; Ohio State University, Summer 1956; Pennsylvania State University, Summer 1959; Certificate in a Special Agricultural Training Program, Purdue University, Summer 1961; Cornell University, Summer 1962.

WOODARD, MAURICE C. (1961) ..... Political Science
B.A., Prairie View A & M College, 1956; M.A., ibid., 1960; North Texas State University, 1961; University of Texas, Summer 1962.

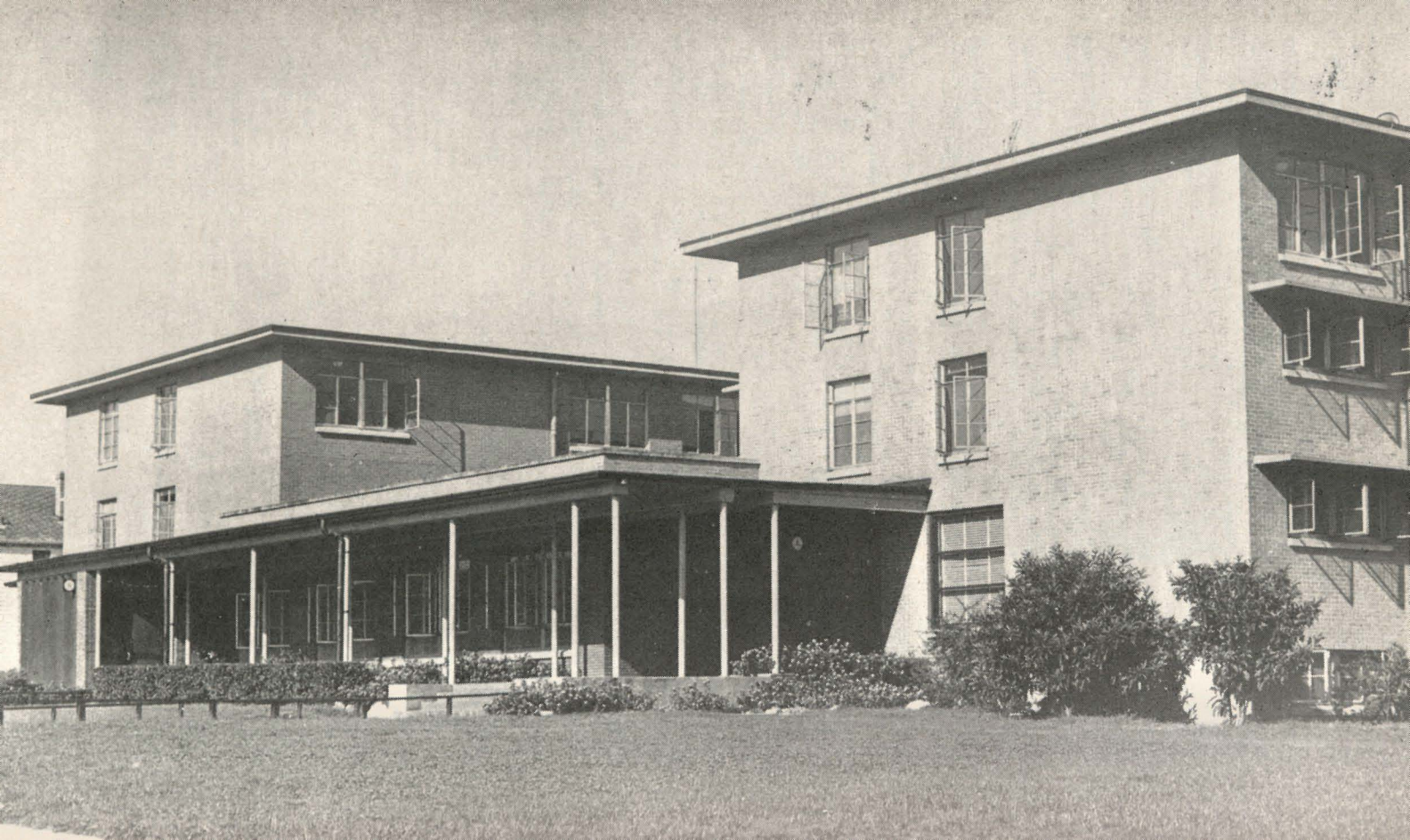
WOOLFOLK, GEORGE RUBLE (1943) ..... Head, Department of History
B.S., Louisville Municipal College, 1937; M.A., Ohio State University, 1938; Ph.D., University of Wisconsin, 1947.

WRIGHT, HOOVER J. (1961) ..... Physical Education
B.S., Maryland State College, 1948; M.Ed., Pennsylvania State College, 1951; State University of Iowa, Summers 1957 1958, 1959, 1960.

YELDELL, MRS. FLORIDA (1963) ..... History
B.A., Morris College, 1936; M.A., Howard University, 1941; New York University, 1951-52, Summer 1953.

YOUNG, PHILLIP (1961) ..... Biology
B.S., Prairie View A & M College, 1950; M.S., University of Illinois, 1954; Ph.D., University of Illinois, 1961.

*On leave



Summary of Graduates

SUMMARY OF GRADUATES

SUMMARY OF DEGREES, DIPLOMAS AND CERTIFICATES

January 1964

Degree	Male	Female	Total
Bachelor of Science in Agriculture	4	0	4
Bachelor of Arts	2	3	5
Bachelor of Arts in Music	0	1	1
Bachelor of Science	2	6	8
Bachelor of Science in Education	2	15	17
B.S. in Architectural Engineering	1	0	1
B.S. in Civil Engineering	1	0	1
B.S. in Electrical Engineering	8	0	8
B.S. in Mechanical Engineering	2	0	2
B.S. in Dietetics	0	5	5
B.S. in Industrial Education	3	0	3
B.S in Nursing	0	3	3
Master of Arts	1	0	1
Master of Education	3	10	13
Master of Science	2	1	3
Certificate of Proficiency	2	0	2
Certificate of Apprenticeship	1	0	1
Total	34	44	78

MAY 1964

Degree	Male	Female	Total
Bachelor of Science in Agriculture	9	0	9
Bachelor of Arts	9	16	25
Bachelor of Arts in Music	1	2	3
Bachelor of Science	22	18	40
Bachelor of Science in Education	5	31	36
B.S. in Architectural Engineering	4	0	4
B.S. in Civil Engineering	4	0	4
B.S. in Electrical Engineering	9	0	9
B.S. in Mechanical Engineering	1	0	1
B.S. in Home Economics	0	5	5
B.S. in Dietetics	0	5	5
B.S. in Industrial Education	18	0	18
B.S. in Nursing	0	25	25
Master of Arts	0	1	1
Master of Education	0	11	11
Master of Science	3	0	3
Certificate of Proficiency	7	4	11
Certificate of Apprenticeship	6	2	8
Total	98	120	218

AUGUST 1964

Degree	Male	Female	Total
Bachelor of Science in Agriculture	4	0	4
Bachelor of Arts	7	10	17
Bachelor of Arts in Music	5	4	9
Bachelor of Science	15	17	32
Bachelor of Science in Education	4	9	13
B. S. in Architectural Engineering	2	0	2
B. S. in Civil Engineering	1	0	1
B. S. in Electrical Engineering	3	1	4
B. S. in Mechanical Engineering	4	0	4
B. S. in Home Economics	4	0	4
B. S. in Industrial Education	12	1	13
B. S. in Nursing	0	5	5
Master of Arts	4	5	9
Master of Education	22	127	149
Master of Science	11	4	15
Certificate of Proficiency	1	2	3
Certificate of Apprenticeship	6	0	6
Total	105	185	290

JOSEPH M. ALEXANDER HALL . . . Wing of modern men's dormitory which housse 250 male students with modern conveniences.

SUMMARY OF ENROLLMENT

First Term Summer 1964

Classes	Agri M	Agri F	A & S M	A & S F	H. E. M	H. E. F	Engr M	Engr F	I. E. M	I. E. F	Nurs M	Nurs F	Total M	Total F	Combined Total
Graduates	18	—	259	689	—	48	—	—	45	4	—	5	322	686	1008
Seniors	16	—	113	208	1	51	30	1	49	2	—	6	209	268	477
Juniors	6	—	48	96	—	18	7	—	23	1	—	21	84	136	220
Sophomores	6	—	43	91	—	15	15	—	19	3	—	4	83	113	196
Freshmen	4	—	36	69	1	6	16	1	10	—	—	2	67	78	145
Special	3	—	5	16	—	—	—	—	7	5	—	1	15	22	37
Transfer	—	—	11	21	—	2	2	—	1	—	—	1	14	24	38
Total	53	—	515	1130	2	140	70	2	154	15	—	40	794	1327	2121

Second Term Summer 1964

Classes	Agri M	Agri F	A & S M	A & S F	H. E. M	H. E. F	Engr M	Engr F	I. E. M	I. E. F	Nurs M	Nurs F	Total M	Total F	Combined Total
Graduates	7	—	169	421	2	70	—	—	33	3	—	5	211	499	710
Seniors	12	—	109	196	1	53	26	1	40	2	—	11	188	263	451
Juniors	5	—	32	66	—	13	5	—	13	—	—	25	55	104	159
Sophomores	3	—	29	54	—	6	11	—	9	3	—	2	52	65	117
Freshmen	2	—	28	51	—	4	10	1	6	—	—	1	46	57	103
Special	2	—	6	12	—	—	—	—	8	4	—	—	16	16	32
Transfer	2	—	8	8	—	3	5	—	1	—	—	—	16	11	27
Total	33	—	381	808	3	149	57	2	110	12	—	44	584	1015	1599

Enrollment Without Duplications, Summer 1964

Classes	Agri M	Agri F	A & S M	A & S F	H. E. M	H. E. F	Engr M	Engr F	I. E. M	I. E. F	Nurs M	Nurs F	Total M	Total F	Combined Total
Graduates	24	—	362	813	2	119	1	—	71	5	—	8	460	945	1405
Seniors	17	—	150	286	1	80	43	2	55	3	—	15	266	386	652
Juniors	8	—	62	128	—	29	11	—	28	1	—	29	109	187	296
Sophomores	6	—	55	111	—	18	23	—	23	4	—	4	107	137	244
Freshmen	3	—	44	89	—	9	25	2	14	1	—	2	86	103	189
Special	3	—	11	24	—	—	—	—	9	52	—	—	23	76	99
Transfer	2	—	17	25	—	5	6	—	2	—	—	—	27	30	57
Total	63	—	701	1476	3	260	109	4	202	66	—	58	1078	1864	2942

SUMMARY OF ENROLLMENT

First Semester 1964-65

Classes	Agri M	Agri F	A & S M	A & S F	H. E. M	H. E. F	Engr M	Engr F	I. E. M	I. E. F	Nurs M	Nurs F	Total M	Total F	Combined Total
Graduates	19	—	105	167	—	15	—	—	11	1	—	2	135	185	320
Seniors	23	—	150	291	1	86	45	—	70	2	—	27	289	406	695
Juniors	22	—	82	204	—	41	23	1	61	3	—	26	188	275	463
Sophomores	15	—	146	241	1	50	44	—	78	7	—	17	284	315	599
Freshmen	31	—	255	409	1	41	115	5	145	3	—	41	547	499	1046
Special	2	—	5	14	—	—	—	—	4	—	—	2	11	16	27
Transfer	2	—	26	38	—	7	4	—	8	—	—	3	40	48	88
Total	114	—	769	1364	3	240	231	6	377	16	—	118	1494	1744	3238

Second Semester 1964-65

Classes	Agri M	Agri F	A & S M	A & S F	H. E. M	H. E. F	Engr M	Engr F	I. E. M	I. E. F	Nurs M	Nurs F	Total M	Total F	Combined Total
Graduates	18	—	74	143	1	12	—	—	6	1	—	—	99	156	255
Seniors	26	—	170	317	1	95	50	1	77	2	—	30	324	445	769
Juniors	17	—	85	187	1	33	26	—	62	4	—	18	191	242	433
Sophomores	11	—	117	225	1	46	31	1	73	4	—	15	233	291	524
Freshmen	22	—	157	263	1	25	85	3	118	2	—	24	383	317	700
Special	1	—	1	12	—	—	—	—	4	—	—	1	6	13	19
Transfer	2	—	23	34	1	5	6	—	8	—	—	3	40	42	82
Total	97	—	627	1181	6	216	198	5	348	13	—	91	1276	1506	2782

ENROLLMENT WITHOUT DUPLICATIONS

First and Second Semesters, 1964-65

Classes	Agri		A & S		H. E.		Engr		I. E.		Nurs		Total		Combined Total
	M	F	M	F	M	F	M	F	M	F	M	F	M	F	
Graduates	31	—	200	527	2	32	—	—	19	2	—	—	252	561	813
Seniors	34	—	190	388	1	104	55	1	95	2	—	34	375	529	904
Juniors	20	—	96	210	1	38	30	—	73	5	—	20	220	273	493
Sophomores	13	—	144	253	1	54	42	1	87	4	—	16	287	328	615
Freshmen	33	—	246	404	1	32	106	3	154	4	—	29	540	472	1012
Special	2	—	23	69	—	3	—	—	6	1	—	4	31	77	108
Transfer	2	—	31	41	1	7	6	—	8	—	—	3	48	51	99
Total	135	—	930	1892	7	270	239	5	442	18	—	106	1753	2291	4044

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GRADUATE STUDY

IMPORTANT NOTICE

TO ALL STUDENTS

Please Study This Bulletin Carefully and Retain It for Your Reference Throughout Your Attendance at Prairie View and REMEMBER . . .

IN ORDER TO GRADUATE A STUDENT MUST . . .

1. Satisy his school and/or department(s) requirements.
2. Earn a minimum grade point average of 2.0 ("C") for all work taken while a student in this college, excluding grades of ("W") and grades cancelled. Grades are cancelled by successful completion of the same course or of a course in a similar subject at the same level.
3. Apply for graduation at the Registrar's Office by October 15th, to graduate at the end of a regular long session; or by March 15th, to graduate at the end of the Summer Session or at the end of the First Semester.
4. Compute grade point average in accordance with the provisions of the catalogue he is entitled to use as a guide for graduation.
5. Secure approval for graduation from his major and minor professor, his dean and the Registrar's Office.
6. Abide by the provisions of the catalogue he is entitled to use in case of an error in computing his requirements.