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Graduate Catalog - The School Year 1967-1969

Prairie View A&M College

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PRAIRIE VIEW TEXAS 77446

Bulletin of

April 1967

PRAIRIE VIEW

AGRICULTURAL AND MECHANICAL COLLEGE

1967-68

Prairie View, Texas 77445

1968-69

CALENDAR

1967

JANUARY							FEBRUARY							MARCH							APRIL						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
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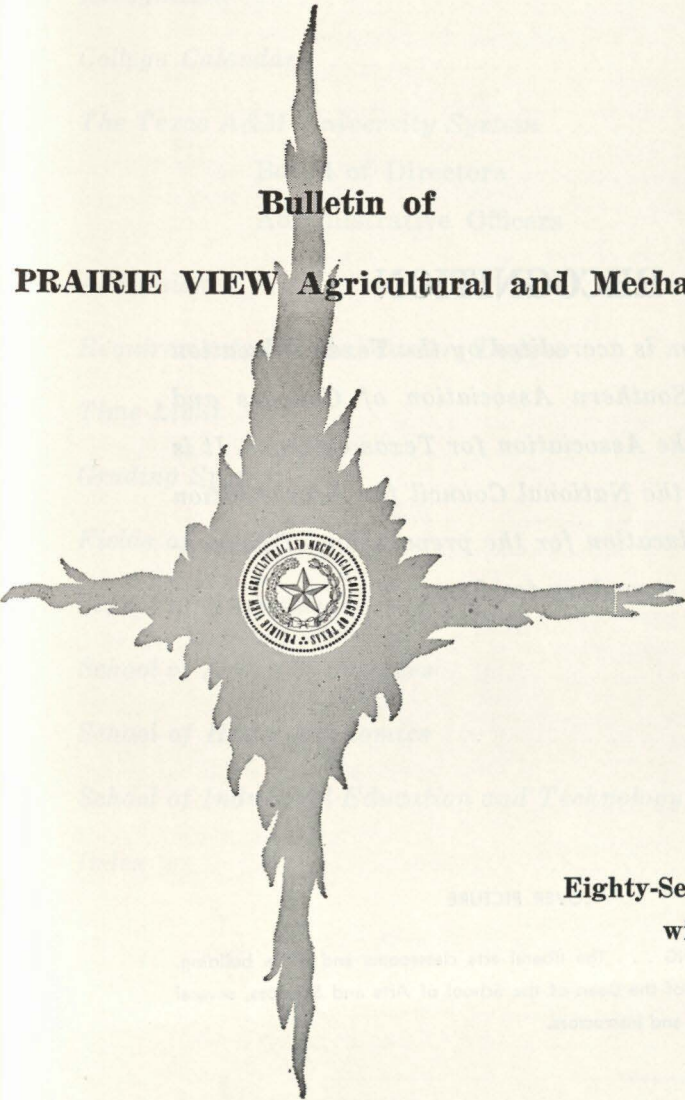
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JANUARY							FEBRUARY							MARCH							APRIL								
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Bulletin of

PRAIRIE VIEW Agricultural and Mechanical College of Texas



Graduate

Eighty-Seventh Catalog Edition 1967-68

with Announcements for

1968-69

LD
4571
P58C37
1967-1969
Grad.

RECOGNITION

This institution is accredited by the Texas Education Agency, the Southern Association of Colleges and 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.

COVER PICTURE

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.

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

VOLUME 57, NUMBER 2

NOVEMBER

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Official College Calendars

REGULAR SESSION—1967-68

September 7-8	Faculty Meeting
September 11-16	Freshman Orientation and Registration
September 16-23	Registration for Graduates
September 18-19	Registration for Upperclassmen
September 20	Classes Begin
September 23	Last Day for Registration
September 27	End of Change of Program Period
November 6-7	Intra Semester Evaluations
Nov. 22 (Noon)-Nov. 27 (8:00 A.M.)	Thanksgiving Holidays
December 21 (Noon)	Christmas Holidays Begin

1968

January 3	Classes Resume
January 15-20	Final Examinations
January 20	First Semester Closes
January 20-27	Registration for Graduates
January 21	New Students Report
January 22-24	Registration
January 25	Classes Begin
January 29	Last Day for Registration
February 5	End of Change of Program Period
March 18-19	Intra Semester Evaluations
April 11 (Noon)-April 16 (8:00 A.M.)	Easter Holidays
May 19	Commencement and Parents Day
May 20-24	Final Examinations
May 25	Second Semester Closes

SUMMER SESSION—1968

June 3-4	Registration, First Term
June 5	Classes Begin
June 10	Registration Closes
July 4	American Independence Holiday
July 14	First Term Closes
July 15	Registration, Second Term
July 16	Classes Begin
July 22	Registration Closes
August 22	Commencement
August 22	Second Term Closes

REGULAR SESSION—1968-69 (Proposed)

September 5-6	Faculty Meeting
September 9-14	Freshman Orientation and Registration
September 14-21	Registration for Graduate Students
September 16-17	Upper-Class Registration
September 18	Classes Begin
September 21	Last Day for Registration
September 26	End of Change of Program Period
November 13-14	Intra Semester Evaluations
Nov. 27 (Noon)-Dec. 2 (8:00 A.M.)	Thanksgiving Holidays
December 21 (Noon)	Christmas Holidays Begin

1969

January 3	Classes Resume
January 13-18	Final Examinations
January 18	First Semester Closes
January 18-25	Registration for Graduate Students
January 19	New Students Report
January 20-22	Registration, Second Semester
January 23	Classes Begin
January 25	Last Day for Registration
January 29	End of Change of Program Period
March 17-18	Intra Semester Evaluations
April 3 (Noon)-April 8 (8:00 A.M.)	Easter Holidays
May 18	Commencement and Parents Day
May 19-23	Final Examinations
May 24	Second Semester Closes

SUMMER SESSION—1969

June 2-3	Registration, First Term
June 4	Classes Begin
June 9	Registration Closes
July 4	American Independence Holiday
July 13	First Term Closes
July 14	Registration, Second Term
July 15	Classes Begin
July 21	Registration Closes
August 21	Commencement
August 23	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

Board of Directors

H. C. HELDENFELS, <i>General Contractor</i>	Corpus Christi
PRESIDENT OF THE BOARD	
CLYDE H. WELLS, <i>Rancher</i>	Granbury
VICE-PRESIDENT OF THE BOARD	
A. P. BEUTEL, <i>Industrial Executive</i>	Lake Jackson
WOFFORD CAIN, <i>Oil and Gas Executive</i>	Dallas
STERLING C. EVANS, <i>Rancher</i>	Houston
L. F. PETERSON, <i>Petroleum Consultant</i>	Fort Worth
GARDINER SYMONDS, <i>Corporation Executive</i>	Houston
CLYDE THOMPSON, <i>Lumber Executive</i>	Diboll
S. B. WHITTENBURG, <i>Publisher</i>	Amarillo

Administrative Officers

EARL RUDDER.....	<i>President</i>
JOHN C. CALHOUN, JR.....	<i>Vice-President for Programs</i>
W. C. FREEMAN.....	<i>Vice-President and Comptroller</i>
HOWARD BADGETT.....	<i>Manager of Physical Plants</i>
ROBERT G. CHERRY.....	<i>Assistant to the President</i>

School of Graduate Study

ADMINISTRATIVE OFFICERS

ALVIN I. THOMAS, Ph.D., President of the College

CLAUDE L. WILSON, M.E., M.S., Dean of the College, Dean of School of Engineering

THOMAS P. DOOLEY, Ph.D., Dean of School of Arts and Sciences

AUSTIN E. GREAUX, B.Arch., Assistant 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

SAMUEL R. COLLINS, EdD., Acting 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., Dean of Student Life

LEROY MARION, B.S., Acting Dean of Men

MRS. R. L. BLAND EVANS, M.S., Dean of Women

LLOYD J. STARK, B.S., Lieutenant Colonel, PMS, and Commandant, Reserve Officers Training Corps

GEORGE R. RAGLAND, Ph.D., Acting Registrar

WILLIAM B. SCOTT, B.A., M.L.S., Librarian

HORACE D. MURDOCK, M.B.A., Business Manager

A. E. ADAMS, B.S., Staff Assistant, Cooperative Extension Service

JOHN B. MURPHY, Ph.D., Director of Teacher Education Programs

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 Graduate Council formulates graduate policies. The Chairman of this Graduate Council 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 session in which they wish to register. This is to be accompanied by an official transcript of undergraduate work completed.

Students are admitted by the Graduate Council, acting through the Chairman, to whom application should be made. For admission to the Graduate School 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 customarily 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 Graduate Council, 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 Graduate Council 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 Graduate School 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.

SCHOOL OF GRADUATE STUDY

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 Graduate Council.

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 Council. 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 Graduate Council; (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.

SCHOOL OF GRADUATE STUDY

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

of Prairie View Agricultural and Mechanical College

Presented to the Graduate School

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 October 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

SCHOOL OF GRADUATE STUDY

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 Graduate Council 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 Graduate Council. 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" (Withdrawn 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	History
Agricultural Economics	Home Economics Education
Agricultural Education	Industrial Education
Biology	Mathematics
Business Education	Music
Chemistry	Physical and Health Education
Economics	Political Science
Elementary Education	Secondary Education
English	Sociology
Extension Education	Special Education
Guidance	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. (Ag Ec 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.

SCHOOL OF GRADUATE STUDY

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, vegetables, live-stock 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 Agricultural 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, methods demonstrations, meetings, news articles, personal services, bulletins, exhibits and circular letters; evaluated from the standpoint of their teaching functions, adaptability, relative influence, costs, 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.

SCHOOL OF GRADUATE STUDY

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.

772 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 Supy) 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.

SCHOOL OF GRADUATE STUDY

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 manifectionous 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 depart-

ment 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 departments 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 Graduate Council.

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 Graduate Council 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

SCHOOL OF GRADUATE STUDY

Home Economics Education	563	Consumer Education
	703	Seminar in Nutrition
	793	Supervision of Home Economics
	553	Family Life Programs
	753	Extension Supervision
	503	Introduction to Social Welfare
Sociology	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.
- (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)
1. 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.

SCHOOL OF GRADUATE STUDY

- 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. Discussions, 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.

SCHOOL OF GRADUATE STUDY

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 Select 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, 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:

The minor in business education consists of 9 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
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Problems in Business Education	15 hours
Seminar in Business Administration	3 hours
	<hr/>
	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.

SCHOOL OF GRADUATE STUDY

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 application to 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 Dean 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.

SCHOOL OF GRADUATE STUDY

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.

SCHOOL OF GRADUATE STUDY

- 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 relation 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 instructor.
- 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.
- 654. Nuclear and Radiochemistry. (Chem 654 Nuclear) (2-4) Credit 4.** A study of the theories of nuclear structure, nuclear energy, nuclear reactions and radioactivity. Radiation detection and measurement; interaction of radiation with matter; health physics; radioisotope technology. Prerequisite: Consent of instructor. Lab fee: \$2.00.
- 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 refractory materials, special methods of precipitation, use of radioactive material, water analysis, special types of calculations. Laboratory: Gravimetric and electrolytic separation (limestones and alloys), evolution methods, gas analysis, electrolytic 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 micro-methods 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.

SCHOOL OF GRADUATE STUDY

763. Biochemical and Clinical Analysis. (Chem 763 Clinical) (0-6) Credit 3. Conferences and laboratory work dealing with analysis of blood, urine and vitamines 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, entropy 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

Majors and minors are offered in the Department of Economics on the Graduate Level. Students desiring to major or minor in Economics should consult with the Head of the Department and plan a program in conjunction with the major professor.

The graduate courses in Economics 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

SCHOOL OF GRADUATE STUDY

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 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.

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 513 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.

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.

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 563.

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.
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. Prerequisite: Economics 563.
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 573, Sociology 213 and the consent of the instructor.
773. **History of Economics 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. Prerequisite: consent of the instructor.

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 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.

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 outlined.

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.

SUGGESTED CURRICULUM FOR A MAJOR IN ELEMENTARY EDUCATION

(Programs in progress prior to September 1, 1965.)

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.

SCHOOL OF GRADUATE STUDY

Psychology 593—Pupil Growth & Development	3 hrs.
Education 633—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 655—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 603—Child Accounting	
Education 873—Modern Practices in Elementary Education	
Education 813—Kindergarten Methods and Materials	

21 hrs.

SUGGESTED CURRICULUM FOR A MINOR IN ELEMENTARY EDUCATION (Programs in progress prior to September 1, 1965.)

Prerequisites: Psychology 593—Pupil Growth and Development	3 hrs.
Education 633—Techg. Read. in the Elementary School	3 hrs.
Education 683—Elementary School Curriculum	6 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 (Programs in progress prior to September 1, 1966.)

Prerequisites: Legal certificates 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 & Development	3 hrs.
Supervision 753—Principles and Practices of Supervision	3 hrs.
Electives	3 hrs.

24 hrs.

SUGGESTED CURRICULUM FOR A MINOR IN ADMINISTRATION

(Programs in progress prior to September 1, 1966.)

Prerequisites: Psychology 593—Pupil Growth and Development	3 hrs.
Education 683—Elementary School Curriculum or	
Education 583—Secondary School Curriculum	3 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

(Programs in progress prior to September 1, 1965.)

Prerequisites: Legal certificates 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 & 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.

SCHOOL OF GRADUATE STUDY

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

(Programs in progress prior to September 1, 1965.)

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 723—Philosophy of Education	3 hrs.
	Education 673—Methods of Teaching Secondary School Subjects	3 hrs.
	Psychology 593—Pupil Growth & Development	3 hrs.
	Administration 533—High School Administration or	
	Supervision 673—Trends in 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 FOR A MAJOR IN SPECIAL EDUCATION

(Programs in progress prior to September 1, 1965.)

Prerequisites:	Legal certificate valid for teaching in the Elementary School or appropriate level served.	
	Education 793—Diagnosis and Remedial Treatment of Elementary School Subjects	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 Practices of Educational Measurement	3 hrs.
	Psychology 593—Pupil Growth & Development	3 hrs.
	Special Education 673—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 Education Measurement	3 hrs.
		6 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—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

(Programs in progress prior to September 1, 1965.)

Prerequisites:	Legal certificate valid for appropriate grades level served.	
	Guidance 543—Principles and Philosophy of Guidance	3 hrs.
	Guidance 583—Occupational and Education 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.
	Psychology 533—Fundamentals of Statistics	3 hrs.
	Psychology 593—Pupil Growth and Development	3 hrs.
		21 hrs.

SCHOOL OF GRADUATE STUDY

SUGGESTED CURRICULUM FOR A MINOR IN GUIDANCE

Guidance 543—Principles and Philosophy of Guidance	3 hrs.
Guidance 583—Occupational and Education Information	3 hrs.
Guidance 693—Organization and Administration of a Guidance Program	3 hrs.
Guidance 733—Principles of Counseling	3 hrs.
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	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.
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	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.
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	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.
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	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) (0-6) 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.

663. Special Projects in Public School Art. (ArEd 663 Projects) (0-6) 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) (0-6) 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 remedial and senior high schools. Analyzing student needs, using appropriate remedial opening 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.

SCHOOL OF GRADUATE STUDY

643. Psychology of Reading and Reading Difficulties. (Educ 643 Psy Reading) (3-0) Credit 3. The nature of reading will be explored with emphasis upon the sociological and psychological factors related to reading success and failure. The learning and enjoyment of reading will be discussed in relations to the psychological factors of motivation, cognition, perception, attitudes, self-control and family dynamics. The relevant theories of the Gestalt (emphasizes the organization, patterning and wholeness of experience) and Psychoanalytic Schools will be particularly stressed. Prerequisite: An undergraduate preparation in Teacher Education.

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 teacher, supervisors, counselors and other persons in personnel work.

583. Educational and Occupational Information. (Guid 583 Occupn 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 Counsel 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.

SCHOOL OF GRADUATE STUDY

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

SCHOOL OF GRADUATE STUDY

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 teachers 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, an 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.

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- 533. Medieval Literature.** (Eng 533 Medieval 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 presentations 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 styles that make up modern theater.
- 753. Seminar in Masterpieces of Literature.** (Eng 753 Seminar) (0-3) 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 school 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 speciality 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. The nature of the Social Studies; the development and changing emphasis in the current social studies programs; purposes and values; classroom methods and materials. Lectures, projects, readings, tests and laboratory experiences.

513. French Revolution and Napoleon. (Hist 513 Fren Revoltn) (3-0) Seminar approach to the causes and the development of the revolution, the disciplining of the Revolution by Napoleon, and greater France in Europe—the imperialistic impulse of the Revolution. Established areas of interest and research studies in both the scholarship and the substantive facts of the course.

523. Imperialism. (Hist 523 Imperialism) (3-0) Credit 3. The Era of modern imperialism, with its causes, results, and techniques are developed under the following areas of investigation: Development and theories of Imperialism in the scholarship of the field, 1870 to 1920; Humanitarianism: Imperialism and Liberalism, 1870 to 1920, with special reference to natural, human, and cultural resources; Neo-mercantilism or "Vampire" Imperialism, 1920 to the Present with special reference to totalitarianism of the left and the right in the approach to natural, human, and cultural resources. Lectures, discussions, research reports, and papers.

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. Twentieth 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

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of sources; the criticism of data; exposition or the presentation of historical evidence. Lectures, laboratory exercises, special reports, tests.

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. Theoretical scholarly treatment of the 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. Theoretical scholarly treatment of the 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. An examination of the development of the scholarship around the following areas of the American Revolutionary experiences as a clinical phenomena in the development of Revolutions: The "Revolution" and American Scholarship, Ideological background, Actionist and Vigilanties, the Fall of Tory rule, the internal revolution, the fever subsidies, Neuer Ordnung. Special reports and research projects. Graduate status.

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. Seminar organization, problem emphasis, special reports, discussions, and research paper.

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

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 improplic-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. A critical examination of selective writings of American History emphasizing the sociological, economic, and political motivations and historical theory. Representative historians and their writings will be selected from the following periods: Colonial, Revolutionary, Nationalistic, Modern and Contemporary. Lectures, discussions, special readings, special reports.

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.

At least a grade of "B" must be earned in each course.

Programs leading to Master of Science Degree in Mathematics:

A student may select one of two programs.

Program A—30 semester hours of graduate mathematics.

Program B—21 semester hours of graduate mathematics and a minor in some other area.

In addition, each program must include a carefully prepared thesis.

A minor in Mathematics at the graduate level must include 12 semester hours of graduate mathematics.

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, percentages; 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 Slect 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,

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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. Application of mathematics to problems of physics and engineering. Special emphasis will be placed upon the role of differential equations in describing physical laws and principles, such as Newton's Law of Motion, Einstein's equation of motion and Kirchhoff's Law of Electricity. Prerequisite: Consent of Instructor.

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

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integral, the Lebesgue integral, and some of their generalizations. Prerequisite: Math 653 or consent of instructor.

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 653.

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 Tech) (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. (Music 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. (Music 873 H S Vocal) (3-0) Credit 3. Organization and administration of (a cappella) 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. (Music 893 H S Instrum) (3-0) Credit 3. Organizational and administration of bands and orchestras in the junior and senior high schools.

911, 921, 931, 941, 951, 961, 971, 981, 991. Music Workshop (Music 911, 921, 931, 941, 951, 961, 971, 981, 991 Workshop). Credit 1. A comprehensive four day course offered the first six weeks of the summer school embracing the organization and conducting of bands, choirs and piano classes and presenting evaluative criteria of music teaching in elementary and high schools. Music fee: \$3.00.

943. Drill and Band Formation in the High School. (Music 943 H S Band) (3-0) Credit 3. Signals, formations, maneuvers for the Marching Band; band shows and pantomimes.

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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. (Musc 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. (Musc 763 Orchestration) (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 counterpart, 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.

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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) ($\frac{1}{2}$ -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.

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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. Prerequisites: 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 Probs) (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, questionnaire, 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

SCHOOL OF GRADUATE STUDY

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, and 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	1 to 6 hrs.
	(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.

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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 513, 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.

SCHOOL OF GRADUATE STUDY

- 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 Intrnalt 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

SCHOOL OF GRADUATE STUDY

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.

DESCRIPTION OF COURSES

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.

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 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.

SCHOOL OF GRADUATE STUDY

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. (HE 513 Home Mgmt) (3-0) Credit 3.** A review of management studies, trends in the field and research related to home management. Topics for consideration based upon student needs and interests. Special consideration to such problems as tension and fatigue, physically handicapped, management problems of homemakers employed outside of home, leisure time, and the aged. One major paper required. Abstracts of research studies due weekly.
- 553. Family Life Problems. (HE 553 Family Life) (3-0) Credit 3.** A study of effects of parenthood, sibling and intergeneration relationships on family solidarity; an analysis of current forces influencing attitudes and behavior; review and analysis of current literature related to human development and interpersonal relationships within the family; exploration of current and emerging factors in marriage and family life. One major paper required. Other projects adapted to special needs and interests of students.
- 563. Consumer Economics. (HE 563 Consumer Econ) (3-0) Credit 3.** Consumer problems including credit; an analysis of buying practices and problems in securing household commodities; consideration of the consumer's viewpoint of the market; a study of home economists' responsibility as representatives of consumers. Special projects based upon students' needs and interests.
- 583. Methods and Techniques of Child Study. (HE 583 Child Study) (3-0) Credit 3.** A study of a variety of methods and techniques, both projective and non-projective, for studying children; analysis of procedures in the selection and development of data collection techniques useful in child development research; consideration of such methods as motion pictures, plays, creative activities, direct observation, interviews, questionnaires, rating methods and projective techniques as a means of considering children's needs and guidance. Experience in development and use of selected techniques.
- 703. Seminar in Nutrition. (Fds 703 Seminar) (3-0) Credit 3.** Review and interpretation of selected materials from the scientific literature in nutrition; state, national, and international nutrition problems in nutrition; emphasis on recent advances in nutrition science. Individual assignments and reports; abstract writing.
- 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.** Review and interpretation of selected materials from the literature in foods; emphases on recent advances in food technology and experimentation; state, national and interpretation of selected materials from the literature in foods; emphasis on foods; implications for teaching at secondary level. Individual assignments and reports; abstract writing.
- 753. Clothing Seminar. (Clo 753 Seminar) (3-0) Credit 3.** A study of the production and consumption of clothing and textiles as related to social science theories; an analysis of clothing behavior of individuals and groups in the United States and other societies. Special related topics may be considered with permission of the instructor.

- 763. Problems in Home Economics.** (HE 763 Problems) (3-0) Credit 3. Current trends and issues in home economics, the school program and profession of home economics; special work in area of major interest. Reports, discussions, term projects. Registration with permission of instructor.
- 773. Advanced Clothing for Graduate Students.** (Clo 773 Adv Clothing) (3-0) Credit 3. Advanced problems in garment construction; experimental approach to the study of factors influencing construction; evaluation of construction techniques. Construction of children and adults garments.
- 803. Draping and Construction.** (Clo 803 Draping) (0-6) Credit 3. A study of the principles of design; draping of fabric on dress form; interpretation of design in relation to different figures; application of design and pattern making principles to various fabrics and styles. Construction of one draped garment.
- 813. Child Development Curriculum.** (HE 813 Child Dvlp) (3-0) Credit 3. A study of modern curriculum approaches in the Nursery school; an analysis of program innovations resulting from research findings and developmental projects. A study of objectives, program organization, content and teaching materials.
- 883. Personal and Family Finance.** (HE 883 Fmly Finance) (3-0) Credit 3. A study of general problems of individual and family handling of money; factors influencing income-expenditure relationships; an analysis of problems and programs for improving adequacy and security of income during the family life cycle. Especially planned for students with limited background experiences on the graduate level.
- 913. Problems of Youth.** (HE 913 Youth) (3-0) Credit 3. Problems concerned with youth during adolescent years; current concerns and research literature review; attention to problem cases as represented in secondary home economics classes. One major paper required.

HOME ECONOMICS EDUCATION

- 512, 522, 532, 542, 552, 562, 572, 582, 592. Workshop (H Ed 512, 522, 532, 542, 552, 562, 572, 582, 592 Workshop). Credit 2.
- 523. Research Problems.** (HE Ed 523 Problems) (3-0) Credit 3. A study of research methods in social sciences applicable to research in Home Economics. Planning a research study; understanding research reports; needed research in home economics. Abstract writing. One major paper required.
- 543. Advanced Methods.** (HE Ed 543 Adv Methods) (3-0) Credit 3. A study of newer trends in teaching home economics with specific emphasis on the concept approach as applied to home economics substantive materials and teaching for generalizations; an analysis of research findings, vocational education changes and changes in contemporary society as related to the formulation of educational objectives, subject matter selection, method and organization, and the role of evaluation in the teaching-learning process. One major paper required.
- 573. Thesis Research.** (HE Ed 573 Thesis) (3-0) Credit 3. Thesis and research. Registration with permission of chairman of graduate committee. Individual conferences and guidance.
- 593. Home Economics Curriculum.** (HE Ed 593 Curriculum) (3-0) Credit 3. Clarification of the philosophy and objectives of home economics and the relationship to the home economics program and community; an analysis of techniques for cooperative program planning based upon student, home and community needs; sociocultural foundations of the home economics curriculum; significant research and vocational education legislation related to organization, content and techniques; study of emerging programs in home economics. Development of curricula for use in individual situations. Selection of area and topic with instructor's permission.

SCHOOL OF GRADUATE STUDY

643. **Adult Education (HE Ed Adult Educ) (3-0) Credit 3.** A study of organizing, administering and planning adult programs; emphasis on methods and materials for teaching adults; evaluation of research and instruction in adult education; supervision of programs; consideration of new programs derived from vocational education legislation. One major paper is required.
723. **Measurement. (HE Ed 723 Measurement) (3-0) Credit 3.** A study of the basic concepts of measurement and evaluation; consideration of standards appropriate to evaluating the achievement of educational goals; an analysis of the use of measurement in improving instruction and providing a basis for guidance. Experience in construction of varied evaluative instruments. One major paper based upon problems experienced in individual situation. Approval of problem by instructor required.
793. **Supervision. (HE Ed 793 Supervision) (3-0) Credit 3.** Principles of supervision as applied to home economics education programs, teaching and learning; analysis of leadership functions, program effectiveness, and supervising practices; criteria for evaluating and improving competence in supervision.
843. **Techniques in Educational Research. (HE Ed 843 Research) (3-0) Credit 3.** Action research in home economics education. Students conduct small research studies designed to improve classroom techniques and procedures. A written report of study is required. Required of Master of Education degree candidates.
623. **Extension Clothing Methods. (Clo 623 Extn Methods) Credit 3.** Methods of 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-years 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.** (Audio 503 Materials) (2-2) Credit 2. I and II. The improvement of learning and teaching through the effective use of Audio-Visual instructional materials; operational procedures for all types of Audio-Visual equipment.

513. **Administration and Supervision of Audio-Visual Education.** (Audio 513 Administration) (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.** (Audio 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.

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583. Industrial 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. Cosmetology 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 and Industrial Education. (IE 753 Practicum). Maximum credit 6 hours. Development of current problems are 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.

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