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## Announcement Graduate Study- The School Year 1939-40

Prairie View State Normal and Industrial College

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*Mr. C. J. Baker  
Campus*

BULLETIN OF  
PRAIRIE VIEW STATE NORMAL AND  
INDUSTRIAL COLLEGE

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Vol. 30

March 15, 1939

No. 3

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ANNOUNCEMENT OF GRADUATE STUDY  
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FOR

1939-1940



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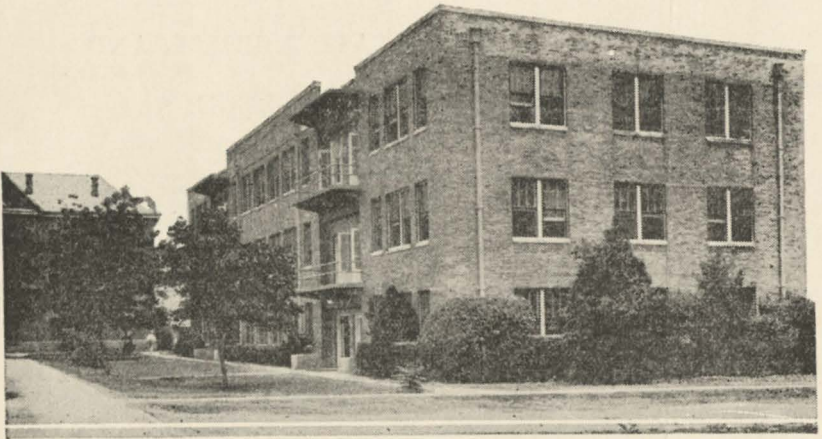
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Published quarterly by the Prairie View State Normal and Industrial  
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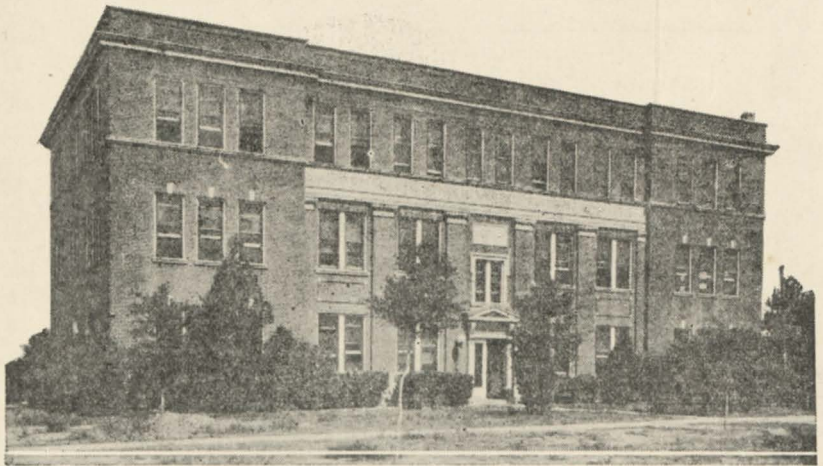
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AGRICULTURE BUILDING



HOME ARTS BUILDING

1939-40

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**COLLEGE CALENDAR**
**1939-40**
**First Semester**

September 11, 12	.....	Entrance Examinations
September 13	.....	Dining Room Opens
September 13	.....	First Semester Begins
September 14	.....	Payment of Fees and Registration
September 18	.....	Classroom Work Begins
September 25	.....	Opening of Training School
November 11 (Armistice Day)	.....	Holiday
November 23 (Thanksgiving)	.....	Holiday
December 25 (Christmas Day)	.....	Holiday
January 1 (New Year's Day)	.....	Holiday
January 26, 27, 29, 30, and 31	.....	First Semester Examinations
January 31	.....	First Semester Ends

**Second Semester**

February 1	.....	Second Semester Begins
February 22 (Washington's Birthday)	.....	Holiday
April 21	.....	(San Jacinto Day)
May 14, 15, 16, 17	.....	Second Semester Examinations
May 19	.....	Baccalaureate Sermon
May 20	.....	Commencement Day
May 21	.....	Second Semester Ends

**Summer Session**

June 3	.....	Summer Session Begins
August 13	.....	Summer Session Ends

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**ADMINISTRATION**

W. R. Banks, A. M., Principal  
O. J. Baker, M. L. S., College Librarian  
J. B. Cade, A. M., Registrar  
E. B. Evans, D. V. M., Director of Summer School  
C. W. Lewis, Local Treasurer  
E. M. Norris, Ph. D., Chairman of Graduate Study

**CO-ORDINATING OFFICERS**

J. J. Abernethy, M. S., Director, Division of Mechanic Arts  
J. B. Cade, A. M., Director, Division of Arts and Sciences  
J. M. Franklin, M. D., Director, Division of Nursing Education  
R. W. Hilliard, Personnel Director  
E. C. May, M. S., Director, Division of Home Economics  
L. A. Potts, M. S. A., Director, Division of Agriculture  
M. E. Suarez, Dean of Women

**COMMITTEE AND CONSULTANTS ON GRADUATE  
INSTRUCTION**

- ABERNETHY, Joseph J., Director of Mechanic Arts Division; 1916. B. S., Kansas State College, 1916; M. S., 1934.
- BAKER, O. J., Librarian. A. B., Morehouse College, 1930; B. L. S., Hampton Institute, 1931; M. L. S., Columbia University, 1936.
- \*BULLOCK, Henry Allen, Sociology; 1930. A. B., Virginia Union University, 1928; A. M., University of Michigan, 1929; University of Michigan, 1934-35, 1938-39.
- CADE, John B., History, Director of Arts and Sciences Division, Registrar; 1931. A. B., Atlanta University, 1921; A. M., University of Chicago, Summer, 1928; University of Chicago, 1933-34; Summer, 1937.
- CARPENTER, Charles E., French, Head of Language Department; 1925. B. L., University of California, 1901; M. L., University of California, 1908; Advanced Work, University of Kansas, Summer, 1932; University of Iowa, Summer, 1937.
- CORUTHERS, J. M., Agricultural Economics. B. S., Hampton Institute, 1925; M. S., University of Wisconsin, 1928; Ph. D., Cornell University, 1934.
- \*DOOLEY, Thomas Price, Biology; 1934. A. B., Morehouse, 1927; Graduate Work, University of Detroit, Summer, 1928; M. S., University of Iowa, 1931-32, 1938-39, Candidate for Ph. D.

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\*On leave, 1938-39

- EVANS, E. B., Veterinary Medicine; 1918. D. V. M., Iowa State College, 1918; Graduate work at Iowa State College, Summers, 1924-34.
- HARRISON, G. Lamar, Education, Head of Education Department; 1932. A. B., Howard, 1926; B. E., University of Cincinnati, 1927; M. A., 1929; Ph. D., Ohio State, 1936.
- HARRISON, W. R., Agricultural Economics and Rural Sociology; 1931. B. S., Howard University, 1930; M. S., Cornell University, 1931; Cornell University, 1936-37.
- \*MAY, Elizabeth C., Home Economics Education, Director of Home Economics Division; 1923. B. S., Kansas State College, 1919; M. S., 1933, Studying towards Ph.D., Kansas State University, 1938-39.
- NORRIS, E. M., Rural Education, B. S., Prairie View State College, 1927; M. S., Cornell University, 1931; Ph. D., Cornell University, 1934.
- PERRY, R. Patterson, Chemistry, Head of Natural Science Department; 1927. A. B., Johnson C. Smith University, 1925; M. S., Iowa University, 1927; Graduate Work at Iowa University, 1931-32 and Summers, 1932, 1937.
- POTTS, Lawrence A., Rural Education; 1929. B. S., Iowa State College, 1925; M. S. A., Cornell University, 1932.
- POWELL, Mayme L., Colthing; 1932. B. S., Hampton Institute, 1929; M. S., Cornell University; 1931; Columbia University, Summer 1935.
- \*\*PRESTON, Anne C., Education; 1933. B. S., Virginia State College, 1931; M. A., Columbia, 1932, studying towards Ph. D., Columbia, 1938-39 (frist semester).
- RANDALL, Albert W., Mathematics, Head of Mathematics Department; 1923. B. S., Alcorn A. & M. College, 1916; A. M., University of Colorado, 1929; University of Iowa, Summer, 1934; University of Colorado, Summer, 1937.
- SASSER, Earl L., English, Head of English Department; 1928. B. S., Shaw University, 1926; M. A., Cornell University, 1928; Ph. D., Cornell University, 1936.
- WARREN, S. E., History, Chairman of Social Sciences Department 1932. A. B., Allegheny College, 1925; A. M., University of Wisconsin, 1929; University of Wisconsin, 1933-35. Has fulfilled residence and language requirements for Ph. D.

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\*On leave, 1938-39

\*\*On leave, first semester, 1938-39

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WILSON, C. L., Mechanical Engineering, Superintendent of Buildings and College Utilities; 1932. B. S. in Mechanical Arts, Kansas State College, 1925; M. E., Kansas State College, 1929; M. S., Kansas State College, 1933.

Other persons will be added or revisions made as the need arises.

#### COMMITTEE ON PLANS FOR GRADUATE STUDY

E. M. NORRIS, B. S., M. S., Ph. D., Chairman; Professor of Rural Education.

J. J. ABERNETHY, B. S., M. S., Director of Mechanic Arts.

O. J. BAKER, A. B., B. L. S., M. L. S., Librarian.

J. B. CADE, A. B., A. M., Director of Arts and Science Division, Registrar, Co-ordinator of Instruction.

G. L. HARRISON, A. B., B. E., M. A., Ph. D., Head of Education Department.

E. C. MAY, B. S., M. S., Director of Home Economics.

R. P. PERRY, A. B., M. S., Chairman of Natural Science Department.

L. A. POTTS, B. S., M. S. A., Director of Agriculture.

E. L. SASSER, B. S., M. A., Ph. D., Head of English Department.

S. E. WARREN, A. B., A. M., Chairman of Social Science Department.



## GENERAL STATEMENT

The principal aim of graduate work at Prairie View State College is two-fold: (1) to provide the student with a comprehensive view of a major field of interest, (2) to train the student for individual or independent investigation in that field of major interest. It is expected that the graduate student seek to develop the power of independent work, to become intensely interested in the true spirit of research and to develop a scientific approach to all problems. It is also expected that the student become widely read in those fields which have direct bearing upon his major work and become familiar with the workers actively engaged in productive research in said fields. A high grade of scholarly work should distinguish the work of the graduate department from the fulfillment of routine requirements. The graduate student should supplement and correlate his understanding of his field, study its background and its relationship to other fields and thereby gain a broader and more practical understanding of its significance. He should be able to cast new light on specific phases of the field and in some way enlarge the scope. The graduate student should acquire technique of analyzing a body of data or observation and the power to express an independent and unprejudiced judgement.

Unhampered by the restrictions that necessarily obtain in undergraduate school the graduate student is expected to assume initiative and responsibility in carrying studies on the graduate level. All facilities for study and investigation afforded by the College are open to the graduate student in so far as he is qualified to make use of such facilities. Various opportunities for study, advice and assistance of teachers are regarded simply as aids to the student in acquiring for himself the discipline and method of independent scholarship.

## ADMISSION

\* For admission to the Graduate Division an applicant must have received his baccalaureate degree from a senior college of recognized standing. In addition, his previous record must indicate fitness and ability to pursue advanced study and to do scholarly research.

Two classes of applicants are recognized: Those who plan to work towards a master's degree, and those who wish to broaden their education without reference to a degree. The first group will follow the regulations governing work for advanced degrees. The second group

may take any work for which their preparation is adequate. Every student admitted under the first classification must pass through a probationary period. After nine weeks of residence a student's status in the Graduate Department, upon action taken by the Graduate Faculty, becomes either that of (1) candidate for a degree, or (2) non-candidate. If after one semester a student fails to show progress, the Graduate Faculty may advise such student to withdraw. \*

Persons seeking admission to the Graduate Division must have the Registrars of their undergraduate institutions file with the Graduate Office complete transcripts of their undergraduate record.

When details of admission have been completed, the prospective student will be given a **permit to enter**. This permit must be presented at the Graduate Office when the student reports for registration.

An application form, which is furnished free (upon request) by the Graduate Office should be filled in and filed with the Chairman of the Graduate Division at least two weeks in advance of intended registration

Each graduate student must registrar on or before the days set aside for registration at the beginning of each term. A student may register at any time during the two weeks immediately preceding the formal registration days. Registration is not complete until fees are paid.

### FEES AND EXPENSES

Since all fees are payable as a part of the student's registration no person should come for registration without sufficient money to cover all his fees and deposits.

1. Matriculation for a semester, \$25.00, payable each semester the student is in attendance.

Matriculation for summer term, \$10.00, payable each summer term the student is in attendance.

2. Activity fee \$5.00 for full regular session, \$2.50 for second semester enrollees. No fee for summer term. (This fee is optional for graduate students).

3. Diploma fee \$10.00

4. Room and board—Graduate students may room in or out of the college dormitories. Graduates students may board in the regular student's dining hall, faculty cafeteria, or in private homes. Rates with the college are as follows:

Dormitory room (regular term, a month) .....	\$ 6.00
Board and room (regular term, a month) .....	18.00
Special campus room (summer term of five weeks) .....	10.00

Board and room (summer term) ..... 22.50  
 Board, cafeteria, charged by the meal.

5. Transcript-of-record fee—one transcript of graduate work without charge is issued to or for a graduate student. A charge of \$1.00, payable in advance, will be made for each subsequent transcript issued to or for a graduate student.

6. For certain courses, students might be required to purchase special materials and supplies.

### SELECTION OF MAJOR AND MINOR FIELDS

Each student registered in the graduate Department must select a **Major Field** to which he intends to devote the larger portion of his time. In addition to a **Major Field** a student must select a **Minor Field** properly related to his **Major**. Students may receive graduate credit for graduate courses and certain advanced undergraduate courses. Certain undergraduate courses may be required without credit allowance toward an advanced degree.

### STUDENT'S ADVISORY COMMITTEE

Each student must select as his advisers a committee composed of not less than three teachers of graduate courses. This committee will be recommended by the Director of Graduate Study in consultation with the student. The personnel of the committee must represent the fields in which the student is taking his major and minor work. A representative of the major field must be chairman of the student's Advisory Committee. This person shall be the chief adviser for the student and the director of the student's research.

A student must file with the Graduate Office, not later than two weeks after registration, a statement showing the consent of his Committee members to serve, together with a statement of major and minor fields selected.

### REQUIREMENTS FOR THE DEGREE OF MASTER OF SCIENCE

The requirements for the degree of Master of Science include (1) satisfactory completion of the minimum residence period, (2) satisfactory completion of certain graduate courses and certain supporting undergraduate courses, (3) presentation of a satisfactory thesis, and (4) the passing of a comprehensive examination.

\* 1. **Residence**—At least a full academic year or the equivalent must be spent in campus residence and a minimum of thirty semester hours must be earned at Prairie View. A student shall not present himself for graduation until he has six month's residence to his credit after

the date on which the Graduate Faculty approved his candidacy for an advance degree.

2. **Course credits**—At least thirty semester hours of graduate work, including the thesis, must be completed satisfactorily. Ordinarily, twenty hours of graduate work in the major field and ten hours of graduate work in the minor field will be required.

3. **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 English Usage Examination or by reports of instructors of courses in which a student is registered.

4. **Thesis**—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 expect to present himself for graduation. A statement of this approval must be filed with the Graduate Office. A candidate should complete his thesis not later than two weeks before the date of his intended graduation in order that it may be examined by each member of the Advisory Committee for 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, 8½x11 inches, leaving the left hand margin at least an inch and a quarter wide, the right hand margin at least three-quarters of an inch. Set up the title page according to the following form:

TITLE OF THESIS

A Thesis

Presented to the Graduate Division  
of Prairie View State College

In partial Fulfillment of the  
Requirements for the

Degree of

Master of Science

By

(Author's Name in Full)

(Date on which degree is to be conferred)

Following the title page there must be a biographical sketch of the author, not exceeding 200 words. An outline is furnished by the Graduate Office for this purpose. Further directions for thesis preparation will be placed in the hands of the student at the time needed.

Two copies of the thesis must be bound at the expense of the student and filed in the Graduate Office. One copy becomes the property of the College Library; the other becomes the property of the Graduate Office.

5. **Final Examination**—After the thesis has been completed and filed with the Graduate Office, the candidate must present himself for the "final examination." This examination may be written or oral or both. In scope it may include examination on subject matter of the major and minor fields, and the thesis. The examination will be conducted by the candidate's Advisory Committee and such other persons as the Advisory Committee may select with the professor in the major field, who has acted as chief adviser to the student, serving as the chairman of the examination committee. Any member of the Graduate Faculty may attend.

#### GRADING SYSTEM FOR GRADUATE STUDENTS

Course work of graduate students is reported as "A" (95-100); "B" (85-94); "C" (75-84); "F" (below 75).

No graduate credit is given for courses in which a grade lower than a "C" is received. In order to show satisfactory progress toward an advanced degree a student must receive an average grade of "B."

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 up 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 opened 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 RESERVATIONS

Each student a special case—The student should be reminded of the fact that graduate work cannot be subjected to rigid regulations and

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that the Committee on Graduate Study reserves the right to view each case upon its merits.

**Courses offered**—The Committee on Graduate Study reserves the right to open or discontinue classes and courses on the basis of need and demand.

## COURSES OF INSTRUCTION

### COURSE NUMBERS

Courses numbered 500-699 are, subject to the approval of the instructor, open to advanced undergraduate students as well as graduate students. Courses numbered 700 and above are open only to graduate students who have fulfilled prerequisites.

For first term courses the middle figure of the Course Number is odd, (Example 713, 733, 753). For second term courses the middle figure of the Course Number is even, (Example 723, 743, 763).

The last figure in the course number indicates semester hours of credit which the course yields.

### FIELDS FOR MAJORS AND MINORS

Major and minors may be selected in the following fields:

Agricultural Economics	General Home Economics
Agricultural Education	History
Agricultural Science	Homemaking Education
Biology	Industrial Education
Chemistry	Mathematics
Economics	Mechanic Arts
Educational Administration and Supervision	Rural Education
English	Rural Sociology
General Education	Sociology

### Related Fields of Concentration

In the selection of a major and a minor a student is expected, ordinarily, to select two fields that are related complementarily. Some suggested combinations are:

1. Agricultural Economics, Agricultural Education, Rural Education, Rural Sociology, Agricultural Science.
2. Homemaking Education, General Home Economics.
3. Chemistry, Biology, Agricultural Science.
5. Educational Administration and Supervision, General Education, Rural Education, Rural Sociology, English, History, Economics, Sociology, Mathematics.
6. Rural Sociology, Sociology, History, Economics.

The student should understand that these combinations are merely suggestive.

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**Special Notes Regarding Majors and Minors in Certain Fields:**
**English****I. Meaning and Scope**

Study in English is offered through presentation of work in the following fields: 1. Language, 2. Literature, 3. Speech

**2. Basic Point of View**

In each field the presentation of work basically aims to point out social and practical rather than art form significance. This does not mean that no effort is made to develop appreciation of material in the field as an art form: the statement is intended to announce the primary aim in presentation of all work in this subject.

**3. Admission**

For admission to graduate study in English the student should present at least an undergraduate minor 21 hours or the equivalent in the field. This undergraduate study should include at least three hours of credit above the sophomore level in the following: American Literature, Public Speaking or Argumentation, The Drama or Shakespeare. A period course such as: Victorian Literature or Eighteenth Century Literature or a specialized course such as Chaucer, Byron, Wordsworth.

**4. Requirements for the Graduate degree**

Of the 20 credit hours required for a graduate major in English the following courses are required:

Course Numbers	Credit Hours
513 or 703 or 713 .....	3
733 and 723 .....	6
732 and 722 .....	4
752 and 742 .....	4
742 .....	2

Of the 10 credit hours required for the graduate minor in English the following courses are required:

Course Numbers	Credit Hours
733 and 723 .....	6
732 or 722 .....	2
752 or 742 .....	2

The Teaching of English, Education (English 463) is required both for the major and the minor.



### Social Sciences

#### Economics, Government, History, Sociology

At present students may major or minor in Economics, Sociology, History, and Government. For a major, a student presents twenty-one hours in the social science selected, twelve hours in history or government and six hours of the remaining ones.\* For example, the requirements for a major in History are given:

History .....	21 hours
Government .....	12 hours
Economics .....	6 hours
Sociology .....	6 hours
Philosophy .....	6 hours
Teaching of history or High School Methods .....	3 hours

For a minor a student presents ordinarily seventeen hours of the social sciences represent the field for such concentrated work: Sociology, Economics, and History. In addition certain auxiliary courses are listed in Government.

Thus for a minimum of twenty hours for a major, the following social sciences represent the field for such concentrated work: Sociology, Economics, and History. In addition certain auxiliary courses are listed in Government.

#### Any Major

All students who are candidates for an advanced degree are expected to take the course in Principles and Practices of Research and Thesis Writing—Research and Statistics 713.

### LIST OF COURSES

#### AGRICULTURAL ECONOMICS

713 ECONOMICS OF AGRICULTURAL PRODUCTION. Three hours credit. The principles of production economics applied to the 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.

733 ADVANCED FARM MANAGEMENT. Business Organization of Texas Farms. Three hours credit. The use of farm management principles in the organization and operation of Texas farms. The study of selecting a farm, farm enterprise; planning cropping systems, equipment needs, and capital. Trips to study representative farms will be made by the class. Prerequisite: Principles of Agricultural Economics.

\*See Bulletin, Catalog Edition, Volume 29; number 4.

723 COOPERATIVE MARKETING OF FARM PRODUCTS. Three hours credit. A study of the principles underlying the successful operation of cooperative marketing organizations, examples of successful fruit, vegetables, livestock and cotton marketing associations will be studied.

743 LAND TENURE AND PROBLEMS. Three hours credit. 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, Three credit hours. A survey of county, state, regional and national land use programs. Sub-marginal, marginal, and super-marginal lands will be considered. Work of the Farm Security Administration, Department of the Interior, and National Resources Board will be studied.

523 MARKETING OF FARM PRODUCTS. Three hours credit. A study of the principles underlying the successful marketing of farm products. A definite study is made of the various middlemen through which farm products pass from the producer to the consumer. Trips will be arranged for the class to visit and study markets. Prerequisite: Principles of Agricultural Economics.

503 THE AGRICULTURAL INDUSTRY. Three hours credit. A comparison of Agriculture with other industries. The economic development of Agriculture in the United States. Types of farming and their geographical locations. Trips will be arranged to study types of farming in different localities.

502, 522 AGRICULTURAL ECONOMICS. Seminar. Two hours credit. Current problems in Agricultural Economics will be discussed. Topics will be reported by students.

513 AGRICULTURAL FINANCE. Three hours credit. Financial requirements of individual farmers; emphasis will be placed also on credit institutions serving the farmers. Prerequisite: Principles of Agricultural Economics.

533 AGRICULTURAL ACCOUNTING. Three hours credit. Principles of accounting applied to the farm business.

543 ECONOMIC PROBLEMS OF THE CONSUMER. Three hours credit. The National and family income; the family budget and stretching the consumers' dollar; consumers' goods and services; substitutes; adulteration; legislation in behalf of consumers; consumers' cooperatives and other organizations; the economics of consumption; educational and consumer problems.

563 LABOR PROBLEMS. Three hours credit. Comparison of psychologies of business and labor groups. Evolution of industrial society and industrial problems. Development of trade unions; industrial disputes; bargaining; trade trade agreements; wages and work-

men's compensation. Labor and the courts. Welfare and labor organizations.

583 CONTEMPORARY ECONOMIC PROBLEMS. Three hours credit. A course dealing with such current problems of our economic system as: economic instability and insecurity; wages, hours and organizations of workers; social waste; finance; and international relations. Prerequisite: a course in Economics, or graduate standing.

573 THE NEGRO IN AMERICAN LABOR MOVEMENTS. Three hours credit. A research and discussion in American labor history, emphasizing the status and role of Negroes from indentured service and slavery to their recent participation in farm and labor movements. For social science majors and graduate students.

602 SOCIAL LEGISLATION. Two hours credit. Compilation, analysis and application of state and federal laws affecting business, industry, agriculture, education, professional service, labor and consumers. Prerequisites: basic courses in economics, government, sociology and education, or consent of instructor.

#### AGRICULTURAL EDUCATION

713 PROBLEMS IN AGRICULTURAL EDUCATION. Three hours credit. Study of the community-program approach to agricultural problems. Procedure includes the scientific approximation of aims, objectives and standards. The course includes participation in field experience and field research.

723 PRINCIPLES OF TEACHING METHODS IN AGRICULTURAL EDUCATION. Three hours credit. The logical and psychological bases for selecting methods of teaching agriculture.

502, 522 AGRICULTURAL EDUCATION SEMINAR. Two hours credit. Designed for all graduate students having majors in Agricultural Education. Only candidates for an advanced degree are eligible to take this course.

513 EXTENSION ORGANIZATION AND PROGRAM DETERMINATION. Three hours credit. An analytical review of the 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, including a discussion of the place of local leaders in extension teaching. The representative organizations of rural people are studied for the purpose of discovering points of contact and interest for cooperation in the conduct of extension work.

533 EXTENSION METHODS. Three hours credit. Aims and objectives of extension teaching and possible ways of measuring accomplishments in this field are reviewed and critically analyzed. Various means and agencies employed in extension teaching are considered, such as result demonstrations, method demonstrations, meetings, news

articles, personal service, bulletins, exhibits and circular letters. They are evaluated from the standpoint of their teaching functions, adaptability, relative influence, cost, inter-relationship and general effectiveness.

543 ORGANIZATION AND CONDUCT OF 4-H CLUB WORK. Three hours credit. The course includes the development of 4-H Club programs and organization considering: Objectives, psychological groupings, community, integration, program content, community, county, state, and federal organization, selection and use of local leaders, annual plans of work, the evaluation. It takes into consideration the methods employed in 4-H work, including: Projects, club meetings, demonstrations, judging work, exhibits, achievement days, camps, short courses, and leader training.

562-3 SPECIAL PROBLEMS IN HOME ECONOMICS EXTENSION. Two or three hours credit. Review of 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.

Majors in Agricultural Education will be advised to select additional courses in the field of Rural Education.

#### AGRICULTURAL SCIENCE

713 SOILS ADVANCED. Three hours credit. (3-0) Open to graduate students qualified in the basic sciences. The basic principles of soil formation and the different soils formed under these conditions will be discussed. Important soil types of Texas, soil profiles, soil fertility maintenance, depletion and the use of the soil survey. Prerequisite: Agronomy 323.

722 ADVANCED SOIL PHYSICS LABORATORY. Two hours credit. (0-4) Open to graduate students who have had the course in advance soils or the two may be taken simultaneously. Laboratory work in the mechanical analysis, the properties of soil constituents, clays, sands, loams, organic matter, lime, soil, color and conductivity.

743 ADVANCED SOIL BACTERIOLOGY. Three hours credit. (2-2) Open to graduate students who have had General and Soil Bacteriology. Studies of the occurrence and activities of bacteria molds, protozoa and algae of the soil and their functions in soil processes.

703, 723 RESEARCH IN SOILS AND CROPS. Three hours credit. (0-6) Soil Bacteriology, Soil Fertility. Soil Physics (Nature and Properties), Soil Management (crops, water and fertilizer relationships), and Soil Erosion (conservation).

503 SOILS. Three hours credit. (1-4) Open to graduates and advanced undergraduates. The general principles of soil formation, soil fertility, including the physical, chemical and biological factors af-

fecting crop production and plant nutrients; depletion, maintenance and methods of keeping a permanent agriculture. Prerequisites: Chemistry 114, 124, Agronomy 313.

513 AGRONOMY. Three hours credit. (2-2) Open to advanced undergraduates and graduate students. The course will consist of lectures and laboratory practice on commercial fertilizers, complete and incomplete fertilizers and their influence on the soil as indicated by colorimetric determination of plant nutrients. Soil from the home farm may be used. Prerequisites: Chemistry 114, 124, Agronomy 323. Open to advanced undergraduate and graduate students. Studies of the different families of seeds seed adulterants and adulteration with some seed identification. Prerequisite: Science 412.

523 AGRONOMY—SEED ANALYSIS. Three hours credit. (1-4)

533 AGRONOMY—BACTERIOLOGY. Three hours credit. (2-2) Open to advanced undergraduate and graduate students. Laboratory practice and lectures on the occurrence and activities of soil bacteria and their influence on decomposition of organic matter and soil fertility. Prerequisite: Biology 134.

522 ECONOMIC ENTOMOLOGY. Two hours credit. (1-2) Open to graduates and advanced undergraduates. Field and laboratory studies of beneficial and harmful insects. Life histories and recommended controls. Prerequisite: Science 412.

553 GENERAL FORESTRY. Three hours credit. Open to students with advanced training in Agriculture and Biology. Three field trips of a day's length each will be made to forests to study trees and commercial woods, forest planting, seed collection, wood lot management, tree scaling and timber estimating. Prerequisite: Botony 134.

### BIOLOGY

703 CYTOLOGY. Three hours credit. (2-1) A course dealing with detailed consideration of the cell components and their significance. Pre-requisite: Advanced undergraduate or graduate standing in Biology.

714 SPECIAL PHYSIOLOGY OF MAMMALS. Four hours credit. (2-4) A course covering the phenomena and reflex activity of the circulatory, respiratory and nervous systems. Some history of physiology is given in the lectures. Pre-requisite: Biology 314 and 324 or the equivalent.

702 EXPERIMENTAL EMBRYOLOGY. Two hours credit. (0-4) A laboratory course dealing with the physiology of reproduction, germ layer origin and cellular differentiation. Pre-requisite: Biology 414 or the equivalent.

712 EXPERIMENTAL GENETICS. Two hours credit. (0-4) A laboratory course in physiological genetics, considering factors which affect such phenomena as crossing-over linkage, non-disjunction and

sex determination. Pre-requisite: Biology 254 or equivalent and advanced undergraduate or graduate standing in Biology.

704 ENDOCRINOLOGY. Four hours credit. (2-4) A course dealing with the physiology of the glands of internal secretion in health and disease. Detail consideration is given the thyroid, the parathyroid, the pituitary, the adrenal, the pancreas, the ovary and the testis. The course is open to students who have had adequate training in physiology (Biology 314, 324 or equivalent).

722 RESEARCH. Credit as arranged. Research may be carried out in the following fields: Cytology, Genetics, Embryology, Endocrinology and Physiology.

### CHEMISTRY

702 ADVANCED ANALYTICAL CHEMISTRY. (2-0) Two hours credit. A lecture course dealing with chemical principles and advanced analytical theory. Prerequisite: Chemistry 224.

712 ADVANCED ANALYTICAL LABORATORY. (0-4) Two hours credit. A laboratory course covering special methods of chemical analysis, including electrometric methods and analyses of selected alloys, minerals, soils, and plant products. The course may be taken separately or along with Chemistry 602. Prerequisite: Chemistry 224.

722 ADVANCED ORGANIC CHEMISTRY. (2-0) Two hours credit. Lectures, recitations, and assigned readings covering the mechanisms of typical organic reactions. Prerequisite: Chemistry 325, or its equivalent.

713 QUALITATIVE ORGANIC ANALYSIS. (1-4) Three hours credit. Lectures and laboratory work covering the separation and identification of pure organic compounds. Prerequisite: Chemistry 325, or its equivalent.

732 BIOCHEMISTRY. (2-0) Two hours credit. Lectures, recitations and assigned readings dealing with recent investigations of biochemical phenomena; plant biochemistry; blood; biological oxidations; metabolism, etc. Prerequisite: Chemistry 444, or its equivalent.

723 INDUSTRIAL ORGANIC AND MANUFACTURING CHEMISTRY. (0-6) Three hours credit. Conferences and laboratory work dealing with the manufacture of organic compounds of industrial importance. Special emphasis is placed upon farm chemurgy and the development of compounds of industrial importance from agricultural products. Prerequisite: Chemistry 325.

RESEARCH. (0-2) One hour credit. Problems for investigation may be selected from one of the following fields: 1. Analytical Chemistry, 2. Organic Chemistry, Biochemistry.

604 and 614 PHYSICAL CHEMISTRY. (2-4) Four hours credit. For advanced undergraduates. The topic considered are pressure-volume

relation of gases; vapor pressure, boiling point, freezing point, and osmotic pressure of solutions; molecular and ionic theories; electrical transference and conduction; reaction rates and chemical equilibria; phase equilibria and thermochemistry. Prerequisites Chemistry 224 and College Physics. (See Chemistry 414 and 424 in regular catalog).

### ECONOMICS

723 ECONOMICS HISTORY OF THE SOUTH. (3-0) Three hours credit. Study of agricultural, commercial and industrial development of the South with emphasis upon conditions in the Southwest.

743 ECONOMIC THEORY AND SOCIAL POLICY. (3-0) Three hours credit. Analysis of economic theories involved in various institutional and government policies, especially those centering around farm control, education, housing, relief, protection of workers and consumers and social security.

713 AGRICULTURAL AND INDUSTRIAL PROBLEMS. (3-0) Three hours credit. Comparative study of economic problems proceeding from agriculture and industry—in a dynamic age.

703 ECONOMIC PROBLEMS OF CONSUMERS. (3-0) Three hours credit. (Same as Economics 323 except that work will be more advanced and the techniques more scientific). A careful piece of research on one of these problems is required.

503 ECONOMIC PROBLEMS OF THE CONSUMER. (3-0) Three hours credit. Course stressing the importance of consumption to production and the problems to consumers which inhere in our capitalistic system; such as budgeting, substitutes, waste, prices, government inspection, retailing, advertisement, etc.; stresses proposals to solve these problems and the need for spread of consumers' cooperatives and consumer education. (See Economics 323 in regular catalog).

513 ECONOMIC HISTORY OF THE UNITED STATES. (3-0) Three hours credit. This course traces the development of agriculture, commerce and industry from colonial times to the present and mentions industrialization, immigration, industrial conflict, etc. industrialization, immigration, unionization, industrial conflict, etc. (See Economics 333 in regular catalog).

523 or 533 ECONOMIC PROBLEMS OF THE SOUTHWEST. (1-4) Three hours credit. A research and field course to ascertain and analyze major economic problems of this region in terms of their causes, consequences and solutions. Prerequisite 213, 223 or Rural Economics 213 or graduate standing. (See Economics 343 in regular catalog).

543 or 553 THE NEGRO IN AMERICAN LABOR MOVEMENTS. (2-2) Three hours credit. A research and discussion course in American Labor History, emphasizing the status and role of Negroes from

indentured service and slavery to pragmatic precarious participation in current labor movements. Prerequisites: Basic courses in Economics and History, or graduate standing, or consent of the instructor. (See Economics 402 in regular catalog).

573 LABOR PROBLEMS. (3-0) Three hours credit. Evolution of industrial society; comparison of the psychologies and techniques of group of employers and workers. Analysis of legislation designed to control labor problems as well as solutions of worker and employer groups. (See Economics 453 in regular catalog).

563 HISTORY OF ECONOMIC THOUGHT. (3-0) Three hours credit. Development of economic thought from the Physiocrats to the Institutionalists. Analyzes leading doctrines of outstanding economic thinkers: Smith, Ricardo, Mill, the Austrians, etc. (See Economics 483 in regular catalog).

583 or 593 SOCIAL SCIENCE SEMINAR. (2-1) Three hours credit. Survey of theories and techniques in the different social sciences. Reports on latest developments and contributions and the opportunities for research and employment for Negroes. (See Economics 490 in regular catalog).

#### EDUCATIONAL ADMINISTRATION AND SUPERVISION

713 FUNDAMENTALS OF SCHOOL ADMINISTRATION. Three hours credit. Open to graduate students who hold or are appointed to positions as principals or supervisors, or who have consent of Director. A brief survey of the history, principles, and practices in school administration followed by a more intensive study of problems (general and specific) involved in school administration. (Offered during summer term only).

733 ORGANIZATION AND ADMINISTRATION OF ADULT EDUCATION. Three hours credit. Open to all graduate students. A study of agencies for the education of adults. Aside from such topics as extension, correspondence, special forums and parental education, attention is given to organization and administration of the special federal program of adult education.

722 FEDERAL RELATIONS TO EDUCATION. Two hours credit. The history of the development and analyses of the intricate problems of federal aid to public education.

723 SPECIAL PROBLEMS OF RURAL SCHOOL ADMINISTRATION. Three hours credit. Open to graduate students holding administrative and supervisory positions in rural areas. A study of the principles, practices, and problems of school administration with emphasis upon problems of schools located in rural areas. Reports required of all.



743 PRINCIPLES OF CURRICULUM BUILDING. Three hours credit. Open to graduate students who hold positions as principals or supervisors or who have consent of Director. Deals with the principles of curriculum construction in elementary and secondary education; investigates the sources of curriculum materials and methods of evaluating curricula. A study or investigation of some aspect of the curriculum is required of all students desiring credit.

753 PRINCIPLES AND PRACTICES OF SUPERVISION. Three hours credit. 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. Deals with the principles, practices and problems of supervision. Special attention is given to organizations for supervision, supervisory programs, research in supervision, cooperation of special agencies, and qualifications for supervisors. (Offered during summer term only).

523 or 543 ADMINISTRATION OF STUDENT PERSONNEL. Three hours credit. Open to students of senior and graduate standing. Deals with the common personnel problems of administrators and supervisors such as extra-curricula activities, guidance, student-faculty relationship; health; admissions; discipline; records and reports; etc.

533 or 553 HIGH SCHOOL ADMINISTRATION AND SUPERVISION. Three hours credit. For fuller description see current undergraduate catalog, Education 393.

502 or 513 VOCATIONAL GUIDANCE. Two or three hours credit. Open to all graduate students. Surveys required of all students. A study of Vocational Guidance as a means of contributing to the major objectives of secondary education. Typical centers, movements, and programs as now carried on. Readings and reports.

572 or 573 SOCIAL AND ECONOMIC FACTORS AFFECTING INDUSTRIAL EDUCATION. Two or three hours credit. Open to graduate students qualified in Industrial Education. Surveys required of all students. A study of social and economic factors affecting industry, including the theories of labor and management, with special emphasis on the economic result of efficient Industrial Education.

592 or 593 ORGANIZATION AND PRESENTATION OF INDUSTRIAL ARTS SUBJECTS. Two or three hours credit. Open to graduate students qualified in Industrial Education. Research problems required of all students. Individual research problems of organization, presentation and administration of Industrial Arts subjects. The nature of the problem will depend upon the student's major interest. The data obtained may be used as a basis for the master's thesis.

522 or 532 ORGANIZATION AND PRESENTATION IN HOME ECONOMICS. Two semester hours credit for a term. Special requirements: persons who have graduated, or advanced Seniors. Spe-

cial prerequisites: teaching experience; recent Home Economics methods course.

### ENGLISH

513 THE ENGLISH LANGUAGE (Growth and Development). Three hours credit. (See English 353, undergraduate catalog).

503 THE NOVEL (Social Backgrounds). Two hours a week throughout the year. First term, European; second term, American. (See English 412 and 422, undergraduate catalog).

523 The Teaching of English (Literature and Composition). (Credit to be recorded as Education-Method). Second term. Three hours credit. (See English 463, undergraduate catalog).

703 and 713 OLD ENGLISH (Readings in the Language). Three hours credit a term. Throughout the year.

733 and 723 SPEECH ARTS. Practical work in speech construction, platform delivery, parliamentary procedure, and play production. Laboratory fee per term \$1.50.

702 and 712 JOURNALISTIC WRITING AND PUBLICITY METHODS. Practical work in the forms. Two hours credit, a term. Throughout the year.

732 and 722 NEGRO LITERATURE (Social Implications). Two hours credit, a term. Throughout the year.

752 and 742 PRINCIPLES OF LITERARY CRITICISM. Wide reading including translations from ancient or "classical" literature. Practice in reading aloud. Two hours credit, a term. Throughout the year.

533 NINETEENTH CENTURY PROSE. Study of ideas, political and social conditions as revealed in writings of chief representatives of the period. Three hours credit.

543 ROMANTIC POETRY. Study of the type through representative selections from ancient and modern literature. Three hours credit. (See English 333, undergraduate catalog).

742 METHODS AND MATERIALS IN RESEARCH. For graduates only. Seminar. Two hours credit, a term. Throughout the year.

### GENERAL EDUCATION

#### Philosophy of Education

703 MODERN EDUCATIONAL TENDENCIES. Three hours credit. A discussion of current educational doctrines and controversies. Fundamental problems in the field of education will be considered with a view to the development of an integrated outlook.

### History of Education and Comparative Education

713 HISTORY OF EDUCATION IN AMERICA PRIOR TO 1890. Three hours credit. A study of the historical backgrounds of American Education and an analysis of the origin and development of educational practices prior to 1890.

723 PUBLIC EDUCATION IN THE UNITED STATES SINCE 1890. Three hours credit. The development of American educational institutions since 1890 as conditioned by social, political, and economic changes in American society.

### Comparative Education

733 COMPARATIVE EDUCATION. Three hours credit. A survey of the present school systems of selected countries such as England, France, Germany, Italy, Russia, Denmark, and Mexico in comparison with that of the United States; and the study of the relation of national and local government to education.

### Elementary Education

743 PROBLEMS OF THE ELEMENTARY TEACHER. Three hours credit. Open to undergraduates who are teachers in service and to graduate students. Special projects, investigations, and reports will be required. Attention will be given to problems presented by members of the class as the outgrowth of their experience.

753 TEACHING THE LANGUAGE ARTS IN THE ELEMENTARY SCHOOL. Three hours credit. This course is designed for those interested in guiding and directing children of elementary school age in reading and in oral and written composition. Special emphasis will be placed on diagnosis and remedial work in reading.

### Secondary Education

533 HIGH SCHOOL ADMINISTRATION. Three hours credit. See general catalog for course description—Education 393. Open to graduates and undergraduates. Special term papers and reports will be required of graduate students.

### Tests and Measurements

523 PRINCIPLES AND PRACTICE OF EDUCATIONAL MEASUREMENT. Three hours credit. The place of tests and measurements in education; selection and construction of the most commonly used tests and measurements. Prerequisite: Education 433. (See Education 443 in regular catalog).

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**GENERAL HOME ECONOMICS**

**703 HOME PLANNING AND FURNISHING.** Three hours credit. A study of the small house with emphasis on adequate planning in location, building and furnishing from the point of view of economy, convenience, and beauty. Prerequisite: House 313—Laboratory practice required.

**713 HOME MANAGEMENT AND HOUSEHOLD EQUIPMENT.** Three hours credit. Open to graduate students who have had House 313 and 403. Deals with economic problems of the household, planning and operation of the home, stability and satisfaction in family groups and consideration of principles and selection of equipment. Laboratory practice required.

**723 CHILD DEVELOPMENT AND BEHAVIOR.** Three hours credit. Prerequisites: Parent Education 401 and 413 and Child Psychology Study of the mental and physical development of the child and major problems in the guidance and behavior of children. Laboratory observation required.

**733 ART IN THE HOME.** Two or three hours credit. Study of the principles of Art as applied to problems in selection and arrangement of furniture, pictures, interior decoration, and flowers, with special emphasis on color, mass, texture and line in each. Laboratory practice required.

**743 FOOD AND NUTRITION.** Three hours credit. Prerequisites: fundamental course in foods nutrition and chemistry. A study of special problems in food and its preparation and the fundamental principles of nutrition and their applications to the feeding of individuals and groups under various health and economic conditions. Laboratory practice required.

**753 CLOTHING.** Three hours credit. Open to graduate students with teaching experience. This course is designed to meet the need of teachers who desire to acquire a knowledge of the recent developments in this field with emphasis on selection care and construction. Laboratory practice in solving problems.

**513 ADVANCED PROBLEMS IN CLOTHING. (1-4)** Three hours credit. Open to seniors and graduate students. Designed for those who plan to major in clothing—including modeling and draping with the use of dress forms. Prerequisites: Clothing 312 and 323. (See Clothing 413 in general catalog).

**523 ADVANCED NUTRITION. (1-4)** Three hours credit. For seniors and graduate students. Principles of normal human Nutrition and applications made of them to practical feeding problems of the individual and of large groups. (See Foods 423 in general catalog).

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**GOVERNMENT**

512 SOCIAL LEGISLATION. (2-0) Two hours credit. Compilation, analysis and application of state and federal laws affecting agriculture, industry, business, labor, education, professional service, consumers, etc. Prerequisites: Basic courses in Economics, Government, Sociology, Education or Agriculture.

ment, Sociology, Education or Agriculture. (See Government 342 in regular catalog).

522 SEMINAR ON GOVERNMENT AGENCIES, INSTITUTIONS, PROBLEMS AND POLICIES. (2-0) Two hours credit. Course may stress local, national or international matters, depending upon the interest and background of the students and teachers composing it.

**HISTORY**

722 THE WORLD SINCE 1914. (2-0) Two hours credit. A survey of world developments for majors and minors in history and for seniors and graduate students from other departments if their background and interest justify it.

713 HISTORY OF THE SOUTH. (3-0) Three hours credit. A social, political and economic history of the South with emphasis upon conditions in the Southwest. Attempt will be made to collect pertinent historical material such as letters, diaries, maps, records, etc.

742 THE NEGRO IN HISTORY. (2-0) Two hours credit. Comparative discussion of materials in the status and roles of Negroes in agricultural and industrial areas of different periods; also a critical appraisal of his participation in the affairs of world powers as well as of colonies and dependencies.

732 SEMINAR ON THE NEGRO IN THE SOUTHWEST. (2-0) Two hours credit. Research—Discussion course training Negroid elements to the Southwest and ascertaining the major contributions to this region and to the country at large.

511 METHODS OF HISTORICAL INVESTIGATION. (1-1) One hour credit. This course stresses the methods of finding, classifying, utilizing, and criticizing the sources of historical data and prepares the student for writing short, documented treatises or evaluating works already written. (See History 401 in regular catalog).

523 HISTORY OF RACE RELATIONS IN THE UNITED STATES. (3-0) Three hours credit. This course describes the minority techniques displayed in making their contribution of culture to American culture. (See History 423 in regular catalog).

543 CONTEMPORARY UNITED STATES HISTORY, 1900-1939. (3-0) Three hours credit. Description and interpretation of the internal and international developments which account for the po-

sition of the United States in present day affairs. Social changes, industrialization, World War, the depression, and the New Deal will be given a close-up study. (See History 443 in regular catalog).

512 METHODS OF TEACHING HISTORY AND THE OTHER SOCIAL SCIENCES. (2-2) Three hours credit. Principles, methods, devices and philosophies of discovering and presenting social science materials in particular and assisting in learning and living in a dynamic society in general. (See History 463 in regular catalog).

### HOMEMAKING EDUCATION

713 PRINCIPLES AND PRACTICES OF RESEARCH AND THESIS WRITING. Three hours credit. Required of all students. (See Research and Statistics 713).

713 RURAL SCHOOL AND COMMUNITY RELATIONS. Three hours credit. (See Rural Education 713).

513 RURAL COMMUNITY RECREATION. Three hours credit. (See Rural Education 513).

533 PROBLEMS OF RURAL HEALTH. Four credit hours. (See Rural Education 533).

502 or 513 VOCATIONAL GUIDANCE. Two or three hours credit. (See Educational Administration and Supervision 502 or 513).

522 or 532 ORGANIZATION AND PRESENTATION IN HOME ECONOMICS. (See Educational Administration and Supervision 522 or 532).

573 PSYCHOLOGY FOR STUDENTS OF EDUCATION. Three hours credit. (See Rural Education 573).

Students majoring or minoring in the field of Homemaking Education will be advised to select additional courses listed under General Home Economics.

### INDUSTRIAL EDUCATION

702 or 703 PROBLEMS IN VOCATIONAL EDUCATION. Two or three hours credit. Open to all graduate students. The solution of some vocational education problems in research or in thesis preparation; problems in administration, supervision, or curriculum building in the varied vocational fields to meet community needs.

732 or 733 PROBLEMS IN VOCATIONAL GUIDANCE. Two or three hours credit. Open to all graduate students. Research problems in phases of Guidance which affect better coordination and supervision of the work of Junior and Senior High Schools, and development of part-time and adult education progress.

722 PROBLEMS IN INDUSTRIAL EDUCATION RESEARCH AND THESIS. Two credit hours. Open to graduate students quali-

fied in Industrial Education. Research problems required of all students. Individual research problems of administration and supervision of industrial educational programs in public schools.

742 or 743. PROBLEMS OF THE GENERAL SHOP IN THE JUNIOR SCHOOL. Two or three credits. Open to all graduate students qualified in Industrial Education. Construction of general shop projects; organization and methods of presentation suitable for the Junior High School. Laboratory 3, Lecture 1 or 2.

762 or 763 INDUSTRIAL METHODS AND PROCEDURE IN INDUSTRIAL ARTS IN SECONDARY SCHOOLS. Two or three hours credit. Open to all graduate students qualified in Industrial Education. A study of the factors of success in teaching shop work and drafting; new objectives in Industrial Arts with resulting changes in curriculum and methods; methods and devices in shop teaching; analysis in learning difficulties and teaching responsibilities in shop and class work; principles of teaching as applied to shop subjects; critical study of shop layouts, organization and management.

512 or 513 VOCATIONAL GUIDANCE. Two or three hours credit. Open to all graduate students. Surveys required of all students. A study of Vocational Guidance as a means of contributing to the major objectives of secondary Education, typical centers, movements, and programs now carried on; readings and reports.

572 or 573 SOCIAL AND ECONOMIC FACTORS AFFECTING INDUSTRIAL EDUCATION. Two or three hours credit. Open to all graduate students qualified in Industrial Education. Surveys required of all students; a study of social and economic factors affecting industry, including the theories of labor and management, with special emphasis on the economic result of efficient Industrial Education.

592 or 593 ORGANIZATION AND PRESENTATION OF INDUSTRIAL ARTS SUBJECTS. Two or three hours credit. Open to all graduate students qualified in Industrial Education. Research problems required of all students. Individual research problems of organization, presentation and administration of Industrial Arts subjects. The nature of the problem will depend upon the student's major interest. The data obtained may be used as the basis for the Master's thesis.

752 or 753 OCCUPATIONAL AND JOB ANALYSIS FOR DETERMINING CURRICULA AND INSTRUCTIONAL PROCEDURES. Two or three hours credit. Open to all graduate students qualified in Industrial Education. Analysis technique as developed by various leaders in Industrial Arts and trade and industrial subjects; job analysis for the purpose of determining the contents of training for an occupation; related content analysis for the purpose of determining what should be taught as class room material; analysis of an industry or of

an industrial plant for the purpose of determining the general outline of a program of plant training.

772 or 773 **LEADERS AND MOVEMENTS IN INDUSTRIAL AND VOCATIONAL EDUCATION.** Two or three hours credit. Open to all graduate students qualified in industrial education. Brief survey of early movements, experiments, and drawings which prepared the way for the Vocational Education program of today with a more intensive study of the development since 1876; a comprehensive study of leaders, institutions, and especially the literature of Industrial and Vocational Education; extensive readings and reports; and term paper on assigned topics.

782 or 783 **CHANGING CONCEPTIONS AND OBJECTIVES IN INDUSTRIAL EDUCATION.** Two or three hours credit. Open to all graduate students qualified in Industrial Education. A critical study of assumptions and the objectives of industrial education; relation of industrial arts to industrial education; and of both to general education; the place of industrial arts and vocational industrial education in a philosophy of education.

### MATHEMATICS

713 **ADVANCED CALCULUS.** Credit three hours. This course is devoted to more advanced topics of the calculus. A study of differential equations is begun in this course. Prerequisite: Differential and Integral Calculus.

723 **ANALYTIC MECHANICS.** Credit three hours. This course deals with statics, the study of equilibrium and dynamics, motion of particles, of rigid bodies, and simple cases of formable bodies under action of forces. Prerequisite: Differential and Integral Calculus.

733 **ADVANCED ALGEBRA.** Credit three hours. This course deals with topics not taken up in the elementary course of college algebra. Some of the topics studied are inequalities, theory of probability, summation of series, etc. Prerequisite: College Algebra.

743 **STATISTICS.** Credit three hours. This course gives an intensive study of the processes of statistical methods with reference to applications in various fields. Prerequisite: Analytic Geometry.

753 **THEORY OF EQUATIONS.** Credit three hours. Complex numbers, general calculations of the cubic and the biquadratic, Horner's and Newton's method are some of the topics studied in this course. Prerequisite: Differential and Integral Calculus.

763 **DIFFERENTIAL EQUATIONS.** Credit three hours. Methods of solving type forms and the formulation of practical problems as solutions of differential equations will be the central point of study. Prerequisite: Differential and Integral Calculus.



773 PROJECTIVE GEOMETRY. Credit three hours. A study of fundamental forms; harmonic sets, perspectivity and projectivity of forms, duality, involution. Prerequisite: the calculus.

783 DIFFERENTIAL GEOMETRY. Credit three hours. A study of the curves in the plane and in space, and of surfaces; introduction to the study of curved spaces. Prerequisite: Calculus and Solid Analytic Geometry.

793 INFINITE SERIES. Credit three hours. This course deals with the convergence and divergence of sequences, and series. It concentrates on simple, absolute, and uniform convergence. A few topics on summable series are studied. Prerequisite: Differential and Integral Calculus.

### MECHANIC ARTS

712 or 713 ADVANCED THERMODYNAMICS. Credit two or three hours. Open to all graduate students qualified in Mechanic Arts and Mathematics. The laws of thermodynamics with applications; physical properties of gases and saturated and superheated vapors—especially air and steam; ideal and actual cycles of hot air and material combustion engines; the fundamental laws governing the flow of fluids with applications to orifices and nozzles.

722 or 723 GRAPHICS OF FORMULAS. Credit two or three hours. Open to all graduate students qualified in Mechanic Arts and Mathematics. Simple empirical equations; curve fitting; diagramming of formulas; and the construction of alignment charts.

732 or 733 ADVANCED KINETICS. Credit two or three hours. Open to all graduate students qualified in Mechanic Arts or Mathematics; Laws of Rectilinear and Curvilinear motion; force; mass and acceleration; dynamics of translation and rotation including momentum, energy, work, and power.

742 or 743 ADVANCED STATICS. Credit two or three hours. Open to all graduate students qualified in Mechanic Arts and Mathematics. Analysis of force system in two and three dimensions by analytical and graphical methods; the laws of equilibrium; distributed forces; components of stress; centers of gravity; movements of inertia and products of inertia.

752 or 753 ADVANCED STRENGTH OF MATERIALS. Credit two or three hours. Open to all graduate students qualified in Mechanic Arts or Mathematics. The physical properties of materials; the common theory or bending, including shearing forces and bending movements, the distribution of normal and shearing stresses, the equation of the elastic curve and the determination of slope and deflection in beams; eccentric loading; stresses due to combination of axial and

transverse loads; theories for determining the strength of columns; the theory of torsion of circular bars; particular emphasis being placed on the application of these theories in the solution of practical problems.

### RESEARCH AND STATISTICS

713 PRINCIPLES AND PRACTICES OF RESEARCH AND THESIS WRITING. Three hours credit. Required of all graduate students. Deals with the selection and evaluation of evidence, the organization and presentation of evidence and data, and published and unpublished aids in research. Each student will be expected to select his thesis problem before the end of the course.

733 PRINCIPLES OF STATISTICS. Three hours credit. A study of the collection and tabulation of data, form of statistical reports graphical presentation, frequency distributions, averages, dispersion, variation, simple correlation, and index numbers. Required of all students pursuing work in Rural Sociology, Agricultural Economics and Agricultural Education.

### RURAL EDUCATION

713 RURAL SCHOOL AND COMMUNITY RELATIONS. Three hours credit. A course devoted to relationships in the field of rural education as they relate to the rural school, community, farm and home life. A study of the State Department of Education surveys, General Education Board and Julius Rosenwald Fund materials for rural schools is required.

723 RURAL SCHOOL SUPERVISION. Three hours credit. This course consists of lectures, readings and discussions with weekly observations of teaching in the Demonstration Schools. It deals with those special problems of supervision and necessary adaptation of general supervisory means which result from present conditions in rural areas. Topic from which selection is made on the basis of expressed needs of students enrolled in course are emphasized. The improvement of instruction through the coordination of cooperative agencies, curriculum revision, etc., is given consideration. This course is restricted to graduate students unless the applicant is engaged or has been engaged in supervisory work.

733 RURAL SCHOOL PROBLEMS. Three hours credit. This course affords an opportunity for study of a special problem in the teaching, supervision, or administration of rural schools or in rural sociology and economics. It may be undertaken only in connection with another rural education course and with the permission of instructors;

and must be completed in residence. Laboratory practice is required of all students.

502 RESEARCH IN RURAL EDUCATION. Two hours credit. Adaptation of research technique to problems in Rural Education.

521, 522 or 523 RURAL EDUCATION SEMINAR. One to three hours credit. This course deals with current problems in the field of rural education. The amount of work accomplished by the student determines the credit given for the course.

513 RURAL COMMUNITY RECREATION. Three hours credit. A course designed for rural community leaders dealing with leisure time activities for the promotion of the recreational and cultural side of rural life. Special emphasis is placed upon home and school play, picnics, family and social recreation, contest and old time games, art-craft, community fair, drama and music. Opportunity is provided for laboratory practice. A limited number of students may enroll in this course with permission from the instructor.

533 PROBLEMS OF RURAL HEALTH. Three hours credit. (1-4) Open to graduates qualified in Agriculture, Home Economics and Science majors from the Arts and Sciences Division. Laboratory and field practice is required of all students enrolled in this course. A course for rural teachers and leaders which includes a study of advance Bacteriology, Epidemiology, Sanitation and Hygiene and Health Problems. Prerequisite: Biology 334, Bacteriology.

552 FUNCTIONS AND USES OF THE LIBRARY. Two semester hours credit. Open to graduate and advanced undergraduate students. An introduction to the use of books and libraries and to bibliography making. A study of the place of the library in the school and in the community, library extension agencies and their services, and the relation of the library to adult education. Lectures, readings, and reports.

522 SPECIAL PROBLEMS OF GUIDANCE AS APPLIED TO RURAL EDUCATION. Two hours credit. A consideration of the major problems, principles and techniques of guidance as applied to rural situations.

573 PSYCHOLOGY FOR STUDENTS OF EDUCATION. Three hours credit. See Education 383, of current catalog. General principles of human psychology as they relate to the learning process.

#### RURAL SOCIOLOGY

713 RURAL COMMUNITY ORGANIZATION. Three hours credit. A study of practical problems of rural community organization. The course is designed to study methods of developing organizations through rural leadership, analyzing needs of the community, building

and coordinating community programs. Prerequisite: courses in General Sociology, Rural Sociology and Economics.

703 RURAL PLANNING. Three hours credit. Survey of existing and proposed types of planning for rural social organization. Prerequisite: courses in Rural Sociology and Economics.

702 or 722 RURAL SOCIOLOGY SEMINAR. Two hours credit. Rural community problems will be discussed by students, faculty members and visiting lecturers.

723 THE RURAL CHURCH. Three hours credit. This course is designed to present in a systematic way the church as a social institution, its functions, problems and programs. Reports are required of all students on specific case studies of the church.

733 THE RURAL FAMILY. Three hours credit. This course considers the social problems of the family in farm and non-farm areas; the functions of the family; marriage and divorce; relations of parent and child and how the family may be aided. Reports are required of all students on specific case studies of family life.

743 RESEARCH IN RURAL SOCIAL ORGANIZATION. Three hours credit. This course is designed primarily for those rural community leaders who would like to carry further investigation on some specific problems based upon the need of their localities. This course will be offered as demand arises.

753 RURAL POPULATION PROBLEMS. Three hours credit. This course is designed to cover such factors as composition, characteristics and movements of rural population.

513 A STUDY OF RURAL SOCIETY. Three hours credit. A study dealing with origin, nature and development of forms of associations in the rural community. A course intended as a basis for special courses. Term paper and periodic reports are required of all students.

523 RACE AND MIGRATION. Three hours credit. A study of the origin, distribution, and contact of races. The process of race contact and conflict will be studied with special emphasis upon Southern Areas. Term paper and periodic reports are required of all students. Prerequisites: two courses in Sociology and one in European History.

532 RURAL COMMUNITY PROBLEMS. Two hours credit. This is a study of social problems found in rural communities. Such community problems as health, standard of living, religion and recreation will be considered. The class will be broken up into small groups for the purpose of class reports. Prerequisite: a study of Rural Society and Introduction to Sociology.

553 or 563 RURAL SOCIAL RESEARCH. Three hours credit. This course involves a study of the various methods involved in social research and investigation. Required of all students seeking a major or a minor in Rural Sociology.

**SOCIOLOGY**

503 HISTORY OF SOCIOLOGICAL THOUGHT. Three hours credit. (3-0) Historical development of important sociological theories with their national and personal identification. (See Sociology 403 in regular catalog)

513 SOCIAL RESEARCH. Three hours credit. (2-2) Methods and principles of research in the social sciences. (See Sociology 483 in regular catalog)

523 WELFARE WORK. Three hours credit. (2-2) Introduction to social case work and public welfare work. (See Sociology 413 in regular catalog)

553 SOCIAL THEORY AND SOCIAL CONTROL. Three hours credit. (3-0) Study of social theories involved in various forms of institutional and governmental control.

543 SEMINAR ON ADVANCED SOCIAL PROBLEMS. Three hours credit. (3-0) Analysis of social problems by means of advanced techniques. Appraisal of proposed solutions.

553 RACE AND THE LAW. Three hours credit. (3-0) Compilation and analysis of laws describing and prescribing relations between the races. Study of the agencies and institutions set up to interpret, apply and enforce them.