

BULLETIN

University of Kentucky



Graduate School

1942-43

July, 1942

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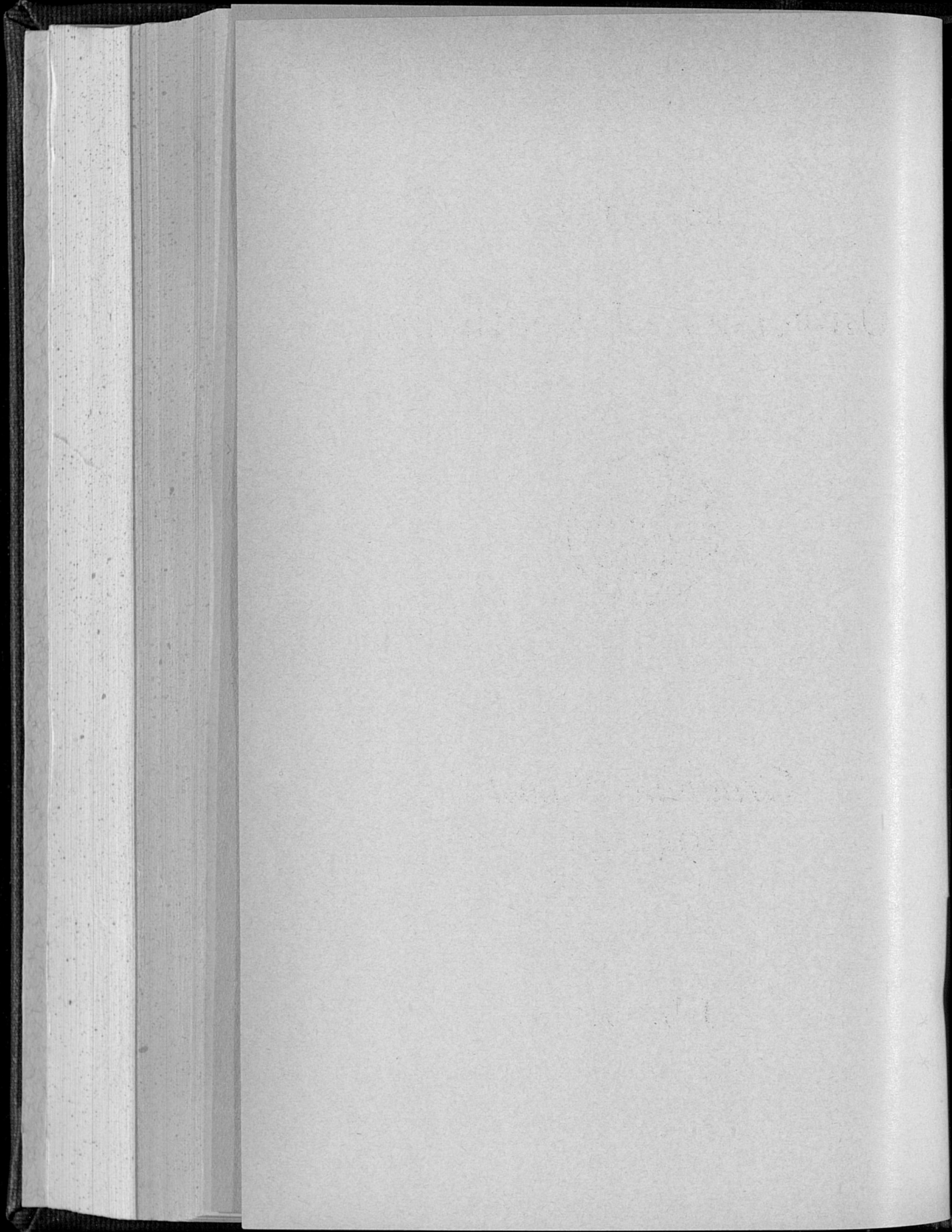
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GRADUATE FACULTY

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UNIVERSITY CALENDAR

1942-43

Fall Quarter

1942

September 15	Tuesday—Meeting of Board of Trustees
September 21	Monday—Classification tests and physical examinations for all new students.
September 22	Tuesday afternoon—Freshman registration
September 23	Wednesday forenoon—Freshman classification
September 23-24	Wednesday afternoon and Thursday—Registration and classification of upper classmen
September 25	Friday—Class work begins
September 30	Wednesday—Last date on which a student may enter an organized class
October 19-20	Monday and Tuesday—Period for filing application for degrees
November 26-30	Thursday, 8 a. m. to Monday, 8 a. m.—Thanksgiving holiday
December 8	Tuesday—Meeting of Board of Trustees
December 19	Saturday, 8 a. m.—Quarter ends.

Winter Quarter

1943

January 4	Monday forenoon—Classification tests and physical examinations for all new students
January 4-5	Monday afternoon and Tuesday—Registration for winter quarter
January 6	Wednesday—Class work begins
January 13	Wednesday—Last date on which a student may enter an organized class
February 1	Monday—Period for filing applications for degrees
March 18	Thursday, 8 a. m.—Quarter ends
March 18-22	Thursday, 8 a. m., to Monday, 8 a. m.—Spring vacation

Spring Quarter

March 22	Monday forenoon—Classification tests and physical examinations for all new students
March 22-23	Monday afternoon and Tuesday—Registration and classification for spring quarter
March 24	Wednesday—Class work begins
March 31	Wednesday—Last date on which a student may enter an organized class
April 5	Tuesday—Meeting of Board of Trustees
April 19	Monday—Period for filing applications for degrees
May 26	Wednesday evening—Military graduation exercises
June 3	Thursday—Baccalaureate services
June 3	Thursday—Meeting of Board of Trustees
June 4	Friday—Seventy-Sixth Annual Commencement
June 7-12	Monday to Saturday—Junior Club Week

Summer Quarter

1943

June 14	Monday—Registration for first term
June 15	Tuesday—Class work begins
June 21	Monday—Last date on which a student may enter an organized class
June 25	Friday—Period for filing applications for degrees
July 21	Wednesday—Final examinations
July 22	Thursday—Registration for second term
July 23	Friday—Class work begins
July 26	Monday—Last date on which a student may enter an organized class
July 29	Thursday—Last date for filing applications for degrees
August 27	Friday—Commencement
August 28	Saturday—Final examinations and end of summer quarter

THE GRADUATE SCHOOL

WILLIAM D. FUNKHOUSER, A. M., PH. D., SC. D., DEAN

INTRODUCTORY STATEMENT

Graduate work is offered in all colleges in the University. Approximately a thousand courses are listed in the catalog, under the various departments, which are accepted for graduate credit.

The following advanced degrees are conferred by the University:

- Master of Arts
- Master of Science
- Master of Science in Public Health
- Master of Science in Agriculture
- Master of Science in Home Economics
- Master of Science in Civil Engineering
- Master of Science in Electrical Engineering
- Master of Science in Mechanical Engineering
- Master of Science in Metallurgical Engineering
- Master of Science in Mining Engineering
- Civil Engineer (C. E.)
- Electrical Engineer (E. E.)
- Mechanical Engineer (M. E.)
- Metallurgical Engineer (Met. E.)
- Mining Engineer (E. M.)
- Master of Arts in Education
- Master of Science in Education
- Doctor of Philosophy

The degree of Doctor of Philosophy is offered with major work in the following departments: Chemistry, Education, Economics, English, History, Mathematics, Physics, Psychology, Political Science, Romance Languages, and in the combined fields of Agricultural Economics and Rural Sociology. Minor work may be carried in any department offering graduate courses.

ADMISSION TO GRADUATE STANDING

Graduates of institutions accredited by the University may be admitted to the Graduate School upon the presentation of a certificate of graduation and an official transcript of undergraduate courses taken. The status of the institution is to be ascertained from the Registrar of the University. Graduates from non-accredited institutions are encouraged to secure a bachelor's degree from an accredited institution. In particular cases they may be admitted

to the Graduate School on the basis of doing additional work before being admitted to full graduate status.

It should be clearly understood that admission to the Graduate School does not necessarily admit a student to full graduate status. A student only attains full graduate status when he has fulfilled all the preliminary requirements of the degree which he seeks and of the department under whose direction he is pursuing graduate work.

Department prerequisites are determined jointly by the Dean of the Graduate School and the respective departments. In brief, it may be stated that such prerequisites usually consist of the equivalent of and undergraduate major. In some fields, the equivalent of an undergraduate minor is sufficient.

Members of the faculty of the University of Kentucky having a rank higher than that of instructor may not be considered as candidates for advanced degrees at this institution.

REGISTRATION

Graduate students should register in the Graduate School on special cards prepared for this purpose.

Applicants from institutions other than this University are also required to file an official transcript showing (a) all undergraduate work covered, (b) graduate work taken, if any, and (c) degrees received.

If the record submitted to the Registrar entitled him to admission he should confer with the Dean of the Graduate School and his major professor concerning preliminary requirements that he may have to satisfy and as to the graduate courses that he should take.

Preliminary requirements may be added from time to time as found necessary and all such requirements, together with graduate courses, must be recorded in the Registrar's Office and must be satisfied by the student before he is eligible for the degree for which he is registered.

All courses listed in this bulletin, and all courses which may appear later in the regular University catalog, which have numbers above 100, may be counted as credit towards a graduate degree, provided that courses numbered 100 to 199 inclusive, may receive graduate credit only with the approval of the student's graduate committee. A grade of D in a course will not be given graduate credit or residence.

FEES

Registration fees per quarter are the same as for undergraduate students in the college in which the major work is done, that is, \$35.00 for residents of Kentucky; \$55.00 for non-residents. This does not include a general deposit of \$6.00.

Before the advanced degree is conferred, a fee of fifteen dollars must be paid at the Comptroller's Office of the University. This covers the graduation fee, diploma fee, fee for binding thesis and all other incidental fees.

APPLICATION FOR DEGREE

All candidates for degrees are required to make formal application for the degree at the office of the Registrar, on special cards provided for that purpose, at least four weeks prior to the date on which the degree is to be conferred.

REQUIREMENTS FOR ADVANCED DEGREES

A graduate student is expected to familiarize himself with the requirements for the degree for which he is a candidate and is held responsible for the fulfillment of these requirements. This applies to the last dates on which theses may be accepted, the dates for examinations, the proper form for theses and all other matters regarding requirements for degrees.

The University of Kentucky offers the degree of Doctor of Philosophy in the eleven departments listed on page 7 of this bulletin, the regular academic degrees of Master of Arts and Master of Science in all departments, and professional degrees in Public Health, Education, Engineering, Agriculture and Home Economics. The requirements for these various degrees are as follows:

REQUIREMENTS FOR THE DEGREES OF MASTER OF ARTS AND MASTER OF SCIENCE

CREDITS

The candidate shall complete thirty-six quarter hours of graduate work in course with a standing of 2 and no grade below C shall be counted.

COURSES

The major field shall comprise, as to courses, approximately two-thirds of the work and with electives (within the department or allied departments) of approximately one-third of the work. The two shall have graduate relationship. All of the work may be taken within one department if the student desires.

RESIDENCE

The minimum residence requirement is one academic year of 36 weeks. This residence requirement may be fulfilled by any combination of quarters which total the required number of weeks.

This does not mean that the work prescribed for each individual can always be completed in the minimum length of time. Inadequate preparation or assistance in departments very frequently make a

longer period necessary. Part-time work during a quarter is evaluated on the basis of the amount of work carried, but the amount of residence for part-time work is limited, except for graduate assistants and part-time instructors, to not more than four weeks in any one quarter.

TRANSFER OF CREDITS

No transferred credits are accepted toward the Master of Arts or Master of Science degrees. All work for these degrees must be done at the University of Kentucky. However, a student is not asked to repeat a course which he has satisfactorily completed at another institution.

THESIS

A thesis is required of every candidate. Two typewritten copies of the completed thesis must be presented not later than three weeks before the time set for the oral examination. One copy is presented to the Dean of the Graduate School to be bound and placed in the University Library and the other to the major professor to be retained by the department concerned.

The Graduate School issues a special bulletin giving definite instructions regarding the form in which the thesis must be presented, and stating the University regulations regarding the style of cover page, title page, biographical sketch, etc., which must be followed. Students are required to observe these instructions in submitting theses and dissertations.

LANGUAGE REQUIREMENT

A reading knowledge of at least one modern foreign language is required. This language should be pertinent to the program of the student. The language requirement must be satisfied by an examination given by the foreign language department offering instruction in the language concerned. The passing of this examination shall satisfy one of the two language requirements for the doctorate.

The language examinations are given by the foreign language departments on the first of October, the first of March (unless these dates fall on Sunday, in which case the examinations will be held the following Monday) and during the second week of the first term of the Summer Quarter. These examinations are given at no other times and students must take the examinations on the dates specified in order to qualify for their degrees for the following commencement.

EXAMINATIONS

Examinations of regular class work are taken by all resident graduate students. A final *oral examination* is given the candidate not later than fifteen days before the close of the quarter. The Dean appoints an examining committee of at least three members for the purpose, selecting its members from the major and minor professors

under whom work is done. The dean is *ex officio* a member of all such examining committees. The candidate is asked to defend his thesis and is examined on any subject matter related to his field.

REQUIREMENTS FOR THE DEGREES OF MASTER OF ARTS IN EDUCATION AND MASTER OF SCIENCE IN EDUCATION

The professional degrees of Master of Arts in Education and Master of Science in Education are open to students who have received either the degree of B. A. or B. A. in Education, or the degree of B. S. or B. S. in Education.

Two plans are provided for satisfying the requirements for either of these degrees as follows:

1. Thirty-six quarter hours in graduate courses exclusive of the thesis with an average standing of 2 or better, one academic year (36 weeks) in residence, and an acceptable thesis. No grade below C is counted toward an advanced degree.
2. At the option of the department (not of the student) the master's degree in education may be granted upon the completion of 54 quarter hours in graduate courses with an average standing of 2 or better, 48 weeks in residence, and no requirement of a thesis.

There is no language requirement for either of the professional degrees in education.

REQUIREMENTS FOR THE DEGREES OF MASTER OF SCIENCE IN AGRICULTURE AND MASTER OF SCIENCE IN HOME ECONOMICS

Students holding a bachelor's degree from a standard agricultural college may obtain the degree of Master of Science in Agriculture or Master of Science in Home Economics by satisfying the following requirements:

1. The completion of 36 quarter hours of graduate work with an average standing of 2 or better, 36 weeks of residence, and a thesis, or
2. The completion of 54 quarter hours of graduate work with a standing of 2 or better, 48 weeks of residence, and no thesis requirement.
3. Under either plan no grade below C may be counted.
4. One-half of the work must be in one department, the remainder in any other department or departments approved by the major professor.
5. There is no language requirement for either of these professional degrees.

In either case a final oral examination is given the candidate not later than 15 days before the close of the quarter in which the degree is to be secured. The candidate is expected to show a comprehensive knowledge of the subject matter related to the field of his major work and in case a thesis has been prepared to defend same.

Graduate students in the College of Agriculture fall into four groups:

Group I.—Those who have presented the degree Bachelor of Science in Agriculture or Home Economics and plan to prepare a thesis under the direction of a major professor in their graduate work.

Group II.—Those who do not have the degree Bachelor of Science in Agriculture or Home Economics and plan to prepare a thesis. Such students may not have had certain essential undergraduate work. In such cases the major professor will recommend to the graduate committee a plan to strengthen the student in such weaknesses. When approved by the committee this plan will become the basis of the student's graduate program.

Group III.—Those students who have the degree Bachelor of Science in Agriculture or Home Economics and request the option to omit the thesis and present 54 quarter hours in graduate courses and 48 weeks of residence. Such students will be assigned a graduate adviser who will aid them in preparing a program for graduate work. The program will be submitted to the Graduate Committee for approval early in the student's residence period.

Group IV.—Those students who do not have the degree Bachelor of Science in Agriculture or Home Economics and who request the option to omit the thesis and present 54 quarter hours in graduate courses and 48 weeks of residence. Students in this group will be assigned a graduate adviser who will aid them in preparing a statement of the candidate's program for the master's degree. Approval of this program by the Committee must be obtained early in the student's residence period. Candidates in Group IV should take one or more courses, preferably advanced courses, in each department of the College of Agriculture in which there is a required course for the Bachelor of Science in Agriculture or Home Economics.

REQUIREMENTS FOR THE DEGREE OF MASTER OF SCIENCE IN PUBLIC HEALTH

Students holding a bachelor's degree from a fully accredited institution or the M. D. degree from a recognized Medical School may obtain the degree of Master of Science in Public Health by satisfying the following requirements:

1. Thirty-six quarter hours in graduate courses with an average standing of 2 or better.
2. No grades below C may be counted.

3. Thirty-six weeks in residence.
 4. An acceptable thesis.
 5. The passing of a final comprehensive examination.
- There is no language requirement for this degree.

REQUIREMENTS FOR ADVANCED DEGREES IN ENGINEERING

Two classes of advanced degrees are offered in the College of Engineering, the Masters' Degrees and the Professional Degrees.

THE MASTERS' DEGREES IN ENGINEERING. The Masters' degrees in engineering may be obtained by satisfying the following requirements:

1. Thirty-six quarter hours in graduate courses with an average standing of 2 or better.
2. No grade below C may be counted.
3. Thirty-six weeks of residence.
4. An acceptable thesis.
5. Two-thirds of the work must be in the major subject.
6. There is no language requirement for these degrees.

The candidate must hold the corresponding Bachelor of Science degree in engineering from this institution or from another engineering school of recognized standing. The degrees offered are Master of Science in Civil Engineering, Master of Science in Electrical Engineering, Master of Science in Mechanical Engineering, Master of Science in Metallurgical Engineering, Master of Science in Mining Engineering.

THE PROFESSIONAL DEGREES IN ENGINEERING. The professional degree of Civil Engineer (C. E.), Electrical Engineer (E. E.), Mechanical Engineer (M. E.), Metallurgical Engineer (Met. E.), or Mining Engineer (E. M.) will be granted only to graduates of the University of Kentucky, College of Engineering, who present satisfactory evidence of professional work of creditable quality in the engineering fields of their choice, extending over a period of five years, and who submit satisfactory theses as further evidence of their professional attainments.

A candidate holding a master's degree in engineering shall be considered to have fulfilled two years of the five years requirement for the corresponding professional degree.

An application for a professional degree must be made to the Dean of the Graduate School and have the approval of the Graduate Committee of the College of Engineering not less than one academic year before the degree may be granted.

The Graduate Committee will pass on the qualifications of each applicant. It may, at its discretion, require an oral examination. The applicant is expected to submit a record of his engineering experience, which should include a complete list of his professional engagements, showing in each case the length of time employed and

the position held. He should give for references the names of at least three persons who are familiar with his engineering work. Preferably these persons should be connected with the organizations by whom he has been employed.

A thesis is required of each candidate. It may be in the field of research, design, invention or engineering processes and methods. It must contain some original thought and be the product of the individual submitting it. Quotations and references with the proper credit may be used. In general, the thesis should be of such a nature that it will be of value to the engineering profession.

The candidate holding a bachelor's degree in one field of engineering may apply for the professional degree in another field of engineering if he has attained unusual prominence and success in that field.

FEES. Except for part time work the fees for a resident student who is a candidate for a master's degree in engineering are the same as for undergraduates. (See the regular University catalog.) The fees for a professional degree are \$15.00 for registration and \$15.00 for graduation.

REQUIREMENTS FOR THE DEGREE OF DOCTOR OF PHILOSOPHY

The degree of Doctor of Philosophy is conferred upon a candidate who, after completing not less than three years of graduate work devoted to the study of a special field of knowledge, passes the required examination in the subjects, presents a satisfactory dissertation, and is deemed worthy of recognition as a scholar of high attainments in his chosen province.

The Doctor's degree is intended to represent not a specified amount of work covering a specified time, but the attainment, through long study, of independent and comprehensive scholarship in a special field. Such a scholarship should be shown by a thorough acquaintance with present knowledge in his special field of learning and a marked capacity for research.

REQUIREMENTS FOR APPLICANT

ADMISSION

Admission to the Graduate School and acceptance of advanced credits from other institutions must first be approved by the Registrar.

In order to be accepted as an *applicant* for the degree of Doctor of Philosophy the student must present evidence that he has completed an undergraduate course and has received his baccalaureate degree from a college of recognized standing.

The Graduate Committee reserves the right to decide in each case of applicancy for a degree whether the prerequisite training has been satisfactory and, if any of the years of advanced work have been

passed in another institution, whether they may be properly regarded as having been spent under suitable guidance and favorable conditions. Private study is not considered as equivalent to university work. In any case the student must pass the qualifying examinations at the University of Kentucky and spend the last year of the residence requirements at this institution.

CLASSIFICATION

A student wishing to become an *applicant* for the Doctor's degree must first regularly register in the Graduate School of the University of Kentucky and must then classify with the Dean of the Graduate School who will appoint a special committee for that student. This special committee, the chairman of which shall be his major professor, will consist of members of the departments in which the applicant elects to do his major and minor work and this committee will supervise his work throughout his period of study.

Not every *applicant* for the Doctor's degree is a *candidate*. A student is not a *candidate* for the degree until he has passed the qualifying examinations, satisfied the language requirements, and has made formal application to be so enrolled.

COURSES OF STUDY

Every applicant for the degree must select one major and at least one and not more than two minor subjects.

The major subject should be one in which he intends to concentrate his efforts; the minor subjects should be closely allied to the major field or be subjects which will be of value in the major work and should be approved by the major department.

The applicant's principal work must be in the major subject. Although no absolute regulations are laid down in respect to the time to be devoted to the major and minor subjects, it may be stated in general that the major subject should represent two-thirds of the student's entire time.

Any regular graduate course may be assigned as part of the applicant's work by his special committee. Only courses numbered above 100 in the University catalogue are considered as of a graduate status. The number and extent of such courses is determined by the special committee.

REQUIREMENTS FOR CANDIDATES

RESIDENCE

A minimum of three collegiate years of resident graduate work, of which at least the last year must be spent at the University of Kentucky, is required for the doctorate. The full time of each of these years must be spent in study. Part-time students and those holding assistantships or engaging in other outside activities will of course be required to take proportionately longer time.

Candidates for the doctor's degree who major in the College of Education may not satisfy residence requirements entirely by attendance in Summer Quarters, but must attend at least two semesters during the regular college year. (See announcement under EDUCATION.)

While it is expected that a well-prepared student of good ability may secure the degree upon the completion of three years of study, it should be understood that this time requirement is a minimum and is wholly secondary to the matter of scholarship. Neither time spent in study, however long, nor the accumulation of facts, however great in amount, nor the completion of advanced courses, however numerous, can be substituted for independent thinking and original research.

Work done in other institutions of learning may be accepted toward the doctorate at the University of Kentucky but no work is credited which has not been done in a college or university of recognized standing or in a research laboratory.

LANGUAGE REQUIREMENTS

The applicant must give evidence of having a good reading knowledge and of being able to translate at sight at least two modern foreign languages. This proficiency is determined by examinations conducted by the respective language departments. Ordinarily French and German are expected to be offered, but other languages may be substituted on recommendation of the special committee if it is considered that such languages are of greater importance in the special field of work. The language requirements must be satisfied before the applicant can be admitted to the qualifying examination.

QUALIFYING EXAMINATION

Applicants for the degree of Doctor of Philosophy are required to pass a Qualifying Examination. This examination should be taken during the last quarter of the second year of residence. The examination shall be both oral and written and shall cover both major and minor subjects. It shall be prepared and given to the applicant by a committee of five to be appointed by the Dean of the Graduate School. The language requirements must have been met before the qualifying examination is taken. No applicant is eligible for his final examination until one year of work has been completed in residence after he has passed the qualifying examination. If the applicant fails to pass the qualifying examination, no re-examination shall be allowed except upon the recommendation of the special committee and the approval of the Graduate Dean. If the applicant passes the qualifying examination he is then considered as a *candidate* for the degree and may make formal application for his rating.

DISSERTATION

Each candidate must present a dissertation covering his thesis work. This dissertation must give evidence of the candidate's ability to carry on independent investigation and must be satisfactory in style and composition. It must represent a definite contribution to the knowledge of his subject, must be the result of independent work, must include original research and must in some way add to or otherwise modify what was previously known on the subject. Two bound typewritten copies of the thesis and an abstract of not less than 1,200 nor more than 3,000 words must be formally presented to the Dean of the Graduate School at least four weeks before the final examination.

PRINTING OF DISSERTATION

One hundred printed copies of the dissertation must be presented to the University within one year from the time when the degree is conferred. Not later than one week before the conferring of the degree the candidate must deposit with the Comptroller of the University the sum of \$50.00, this amount to be returned if the printed copies are received within the time specified. The University does not obligate itself to publish the thesis but if in the judgment of the Graduate Committee the thesis or an abstract of same should be published, the University reserves the privilege of so doing.

—Or—

The candidate may have the dissertation printed at his own expense, in which case he must present one hundred copies to the University before the degree is granted. If the candidate has the dissertation printed at his own expense, he will be expected to use good substantial paper and slightly typography. A page four by six inches with outside margin of at least one inch is recommended. The dissertation must have a cover and title page and the latter, in addition to the title and the name of the author, must bear the following inscription:

"A dissertation submitted in partial fulfillment of the requirements for the degree of Doctor of Philosophy at the University of Kentucky."

If the dissertation is published in a technical journal or other recognized educational publication, the reprints will be accepted if presented with special printed covers and proper title page

FINAL EXAMINATION

After the acceptance of the dissertation by the special committee and the Dean of the Graduate School, the candidate shall be given a final oral examination by a committee of five members which shall include the Head of the Major Department or his delegate presiding,

one additional professor selected by the major department, one professor selected by each of the minor departments and additional members (to make the total of five) selected by the Dean of the Graduate School. The President of the University and the Dean of the Graduate School are *ex officio* members of all examining committees.

The final examination shall not be held until at least one year has been spent in residence after the student has been accepted as a *candidate* for the degree.

The completion of three years of residence work confers no right upon the student to be so examined.

RECOMMENDATION

After the final examination has been passed, the name of the candidate will be presented for recommendation to the Board of Trustees for the degree of Doctor of Philosophy in course.

FELLOWSHIPS AND SCHOLARSHIPS

The University of Kentucky offers the following graduate fellowships and scholarships for the encouragement of research and advanced study:

The Margaret Voorhies Haggin Trust Fellowships and Scholarships in memory of her father, George Voorhies.

Two University fellowships with a stipend of \$500.00 each.
Ten University fellowships with a stipend of \$400.00 each.
Fifteen University scholarships with a stipend of \$200.00 each.

The primary object of these appointments is to stimulate research and not to give pecuniary aid. Scholars and fellows are expected to devote their entire time to graduate work, and no teaching or other departmental work may be required of them. The award is paid in ten equal monthly installments and does not include a remission of tuition or other University fees. The appointments are made for one year only but may be renewed if it can be shown that the prosecution of research should continue.

These fellowships and scholarships are open to students who hold a bachelor's degree from any college or university in good standing, provided the student has shown some special aptitude for the line of work he desires to pursue. No student should apply for the award who does not cherish a real and earnest desire to do research work.

Forms for making application may be secured from the Dean of the Graduate School and must be submitted not later than March 25.

GRADUATE STUDENTS NOT CANDIDATES FOR A DEGREE

Graduate students who are not candidates for an advanced degree are not required to designate major or minor subjects, but may elect their work with a view to the special purpose for which they are in attendance at the University.

Any course of study announced for advanced undergraduates and graduates is open for election by such students upon the same conditions that are imposed upon those who are candidates for degrees.

Should a graduate student, who has not arranged for his work with a view to obtaining a degree, subsequently desire to become a candidate for a degree, the number of quarter hours he is to receive for work already done will be determined at the time he applies for admission to candidacy for the degree.

No work is given graduate credit unless the student was enrolled in the Graduate School at the time during which the work has taken.

GRADUATE FIELDS OF STUDY

The courses offered for graduate work are listed under the following groups:

I. LANGUAGES AND LITERATURES

- Ancient Languages
- English
- German
- Journalism
- Library Science
- Romance Languages

II. SOCIAL SCIENCES

- Archaeology (See Biological Sciences)
- Commerce
- Commercial Education (See Education)
- Economics
- Educational Psychology (See Education)
- Farm Economics (See Agriculture)
- History
- History of Education (See Education)
- Law (See Law)
- Markets and Rural Finance (See Agriculture)
- Philosophy
- Philosophy of Education (See Education)
- Political Science
- Psychology
- Rural Sociology (See Agriculture)
- Sociology

III. BIOLOGICAL SCIENCES

- Agronomy (See Agriculture)
- Anatomy and Physiology
- Animal Industry (See Agriculture)
- Animal Pathology (See Agriculture)
- Anthropology and Archaeology
- Bacteriology
- Botany
- Entomology (See Agriculture)
- Horticulture (See Agriculture)
- Hygiene
- Psychology (See Social Sciences)
- Zoology

IV. PHYSICAL SCIENCES

Chemistry
Engineering (See Engineering)
Geology
Mathematics and Astronomy
Physics

V. AGRICULTURE

Agriculture Education (See Education)
Agricultural Economics
Agricultural Entomology
Agronomy
Animal Industry
Animal Pathology
Farm Economics
Farm Engineering
Home Economics
Home Economics Education (See Education)
Horticulture
Markets and Rural Finance
Rural Sociology

VI. EDUCATION

Administration
Agricultural Education
Commercial Education
Educational Psychology
Elementary Education
History of Education
Home Economics Education
Philosophy of Education
Physical Education
Secondary Education

VII. ENGINEERING

Civil Engineering
Electrical Engineering
Mechanical Engineering
Metallurgical Engineering
Mining Engineering

VIII. FINE ARTS

Art
Music

IX. LAW

X. SOCIAL WORK

GRADUATE COURSES OF STUDY

Note. Arabic numbers in parentheses indicate the number of quarter hours given for each course and the Roman numerals refer to the quarter in which the course is offered.

I. LANGUAGES AND LITERATURES

ANCIENT LANGUAGES AND LITERATURES

LATIN

109a—LATIN LITERATURE (Selections). The authors read will probably be: Juvenal (Selected Satires); Martial (Selected Epigrams); Suetonius (Two of the Lives); Seneca (Essays). These writers will be read for their literary value, and for the light they throw on the political and social life in Rome at the close of the first century, A. D.

Prerequisite: Latin 7 or 8 (3) I (Jones)

109b—LATIN LITERATURE (continuation)
(3) II (Jones)

109c—LATIN LITERATURE (continuation)
(3) III (Jones)

110a—LATIN LITERATURE. The authors and selections read will be those that have not been read by any member of the class. These will probably be one or more plays and selections from the letters and philosophical writings of Cicero.

Prerequisite: Latin 7 or 8 (3) I (Jones)

110b—LATIN LITERATURE (continuation)
(3) II (Jones)

110c—LATIN LITERATURE (continuation)
(3) III (Jones)

114a—LATIN COMPOSITION. The course will begin with easy passages in connected discourse and will proceed to more difficult selections.

Prerequisite: Latin 5 (1) I (Jones)

114b—LATIN COMPOSITION (continuation)
(1) II (Jones)

120—GREEK CIVILIZATION (given entirely in English). A brief review of Ancient Greek history; the private and public life of the people; archaeology.

Prerequisite: Junior Standing. (3) I (Jones)

121—ROMAN CIVILIZATION (given entirely in English). A brief review of Roman history; private and public life of the Romans; Roman archaeology.

Prerequisite: Junior Standing. (3) I (Jones)

122a—GREEK LITERATURE IN ENGLISH TRANSLATION
Epic and Lyric poetry, beginning with Homer.

Prerequisite: Junior Standing. (3) II (Jones)

122—GREEK LITERATURE IN ENGLISH TRANSLATION
History, oratory, philosophy, drama.

Prerequisite: Junior Standing. (3) I (Jones)

150a—TEACHERS' COURSE IN LATIN. Based on First Year Latin.

(3) IV (Jones)

150b—TEACHERS' COURSE IN LATIN. Based on Second Year Latin.

(3) IV (Jones)

151a-d—COURSE IN INDIVIDUAL WORK. The work assigned will depend upon the needs of the student.

Prerequisite: Junior Standing (3) I, II, III, IV (Jones)

201a—LATIN PASTORAL POETRY. Based on Virgil's Eclogues and Georgics, together with selections from other authors.

Prerequisite: Graduate Standing. (3) II (Jones)

201b—LATIN ELEGIAC POETRY. Selections from Catullus, Tibullus, Propertius, and Ovid.

Prerequisite: Graduate Standing. (3) III (Jones)

GREEK

149—FREEMAN AND LOWE'S GREEK READER, together with easy selections from other writers.

Prerequisite: Junior Standing. (3) III (Jones)

152—ANABASIS. Selections from books 2-4 of the Anabasis and from other authors of equal difficulty.

Prerequisite: Greek 149. (3) I (Jones)

153—HOMER. The Iliad, books 1-6. The Homeric Question, Life in the Homeric Age.

Prerequisite: Greek 149. (3) I (Jones)

154—PLATO. The Apology, Crito, and Selections. Socrates as a moral teacher, his pupils and methods of investigation.

Prerequisite: Greek 149. (3) II (Jones)

155—HERODOTUS (Selections). A rapid survey of Greek History from the Ionic Revolt to the end of the Persian Wars.

Prerequisite: Greek 149. (3) III (Jones)

ENGLISH

The Department of English requires, as a prerequisite for the master's degree, attainment in English equivalent to that required of an undergraduate English major at the University of Kentucky. For the Master's degree, a minimum of twenty-four quarter hours of English must be offered, including seminar. A maximum of twelve quarter hours in other subjects is permitted, provided these courses have the approval of the Graduate Committee of the Department of English. All candidates for the Master's degree in English will be required to attain a reading knowledge of one foreign language before receiving the degree.

The Department will accept candidates for the Doctor's degree in the fields of later American Literature, Eighteenth Century and Linguistics.

100a—SENIOR REVIEW OF ENGLISH LITERATURE. An advanced course for senior majors in English; the approach will be historical; it is designed not only to give the student a knowledge of the continuity of English literature, but also to integrate ideas presented to him during his college career; it will serve as a basis for review, correlation and extension of the student's curriculum. Required of all English majors.

(5) I (Staff)

100b—SENIOR REVIEW OF ENGLISH LITERATURE. A continuation of 100a.

(5) II (Staff)

102—HISTORY OF THE ENGLISH LANGUAGE. A survey of the development of the language, based upon Emerson's *History of the English Language*; other readings upon various phases of language development.

(5) I (Dantzler)

105—CHAUCER. The principal works of Chaucer will be read. Each student will prepare one book.

(5) II (Dantzler)

106a—ENGLISH ROMANTIC POETRY. A rapid survey of the characteristics of the classical period, and a more careful study of growing signs of Romanticism in the early part of the eighteenth century. The French Revolution and its influence on the chief poets of the Romantic Movement. Special emphasis on Wordsworth, Byron, Shelley, Keats and other prominent poets of the first quarter of the nineteenth century.

(5) I (Brady)

106b—ENGLISH ROMANTIC PROSE. This course is designed to continue the study of ideas developed in English 106a as revealed

in Rousseau, Godwin, Coleridge, Hazlitt, Lamb, DeQuincey, the Gothic romance, and Scott.

(5) II (Brady)

107a—VICTORIAN POETS. Extensive study of the ideas of the chief poets of the Victorian era, with special emphasis on the works of Tennyson, Browning, Arnold, Swinburne and Rossetti.

(5) II (Brady)

107b—VICTORIAN PROSE. A careful study of Carlyle, Ruskin, Newman, Spencer, Arnold, Huxley, and related writers of the period in the field of prose. Assigned parallel readings, class discussion, and lecture.

(5) III (Brady)

108a—PRINCIPLES OF LITERARY CRITICISM. The course attempts to show criticism as a growth and development in an historical survey and to give a corpus of opinion about literature.

(5) I (Farquhar)

108b—PRINCIPLES OF LITERARY CRITICISM. A continuation of 108a.

(5) II (Farquhar)

109—PRE-SHAKESPEAREAN DRAMA. An historical course in English dramatic origins.

(5) III (Farquhar)

110a—SHAKESPEARE—COMEDY. Shakespeare's comedies will be studied in detail.

(5) I (Farquhar)

110b—SHAKESPEARE—TRAGEDY. A continuation of 110a. will be studied in detail.

(5) II (Farquhar)

111—THE VICTORIAN NOVEL IN ENGLAND. A study of the Victorian novel to and including Thomas Hardy. Eleven novels are read.

(5) (Knight)

116—THE CONTEMPORARY DRAMA. Development and tendencies in Continental, British, and American Dramatic literature, 1850 to 1918.

(5) III (Farquhar)

123a—AMERICAN LITERATURE BEFORE 1830. A survey intended to show the development of American life, thought, and letters up to the Transcendental movement. Emphasis upon Edwards, Paine, Franklin, Irving, Cooper, Bryant.

(5) I (Knight)

123b—AMERICAN LITERATURE AFTER 1830. A continuation of 123a, which is not prerequisite. Beginning with the Transcendentalists, it studies the triumphant years of American romanticism, with especial attention to Emerson, Thoreau, Hawthorne, Melville, Poe, and Whitman.

(5) II (Knight)

124—THE RENAISSANCE. A survey of the literature of the Elizabethan period exclusive of the drama. Foreign sources of the English Renaissance. The sonnet from its original to its development in Spenser. The pastoral from Thocritus to Spenser. Utopian literature from Plato to More.

(5) I (Dantzler)

125—PRONUNCIATION OF MODERN ENGLISH. A study of present day pronunciation; dialectical peculiarities. Students will become proficient in using a phonetic alphabet.

(5) III (Dantzler)

127a—LITERATURE OF THE BIBLE. A literary study of the Bible by Books. It develops an appreciation of literature generally because of the demand that literature identify itself with the highest thought and feeling.

(5) II (Farquhar)

127b—LITERATURE OF THE BIBLE. This is a continuation of 127a.

(5) III (Farquhar)

130a—COMPARATIVE LITERATURE. Extensive reading of literary masterpieces through the ages from Homer to the present day. A study of the great traditions of civilization as reflected in the literary monuments. Lectures, assigned readings, and class discussion. Intended for advanced undergraduates or graduate students. The reading is assigned entirely in translations, but a reading knowledge of at least one foreign language is highly desirable.

(5) II (Brady)

130b—COMPARATIVE LITERATURE. A continuation of 130a

(5) III (Brady)

131a-d—INDEPENDENT WORK. A course for juniors and seniors of exceptional scholastic standing. Each student pursues a course independently. He writes a paper embodying results of this study and submits to an examination by the staff of the Department.

(3) I, II, III, IV (Staff)

133—THE DEVELOPMENT OF AMERICAN REALISM. Traces the progress of American realism from Yankee and pioneer humorists through the local color school, the leading novelists of the eighties

and nineties, their contemporaries in drama and poetry, to the writers of today. Especial attention is given to the social and economic conditions which motivated this literature.

(5) IV (Knight)

143—EDGAR ALLAN POE. A comprehensive study of Poe's works, poetry and prose. Primarily for the summer session.

(5) IV (Farquhar)

147—AGE OF JOHNSON. From the death of Pope to 1798. Johnson and his cricle: Burke, Goldsmith, Gray, Walpole, Cowper. The pre-romantic movement.

(5) I (Galloway)

152—AGE OF POPE. Addison and Steele, Swift, Pope, and Defoe.

(5) III (Galloway)

153—RESTORATION—EIGHTEENTH CENTURY DRAMA.

(5) III (Galloway)

155a—CONTEMPORARY ENGLISH POETRY. An examination of the forces which developed to create modern poetry in England and America since 1900. The course to be historical of the movements and currents in their origins and ideas and to be literary and esthetic in an appreciation of form, matter and style. Collateral reading.

(5) I (Farquhar)

155b—CONTEMPORARY ENGLISH POETRY. A continuation of 155a.

(5) II (Farquhar)

160—THEORY AND TECHNIQUE OF ACTING. Theory of acting applied to individual problems and groups. Development of skill, effectiveness, and grace in the use of the body. Attention on establishing mood, reactions between characters, suspense, three voice modulations, pause, and other modes of emphasis, sustaining tone and emotion, projecting voice and characterization, procuring audience response, timing, and analysis of characterization. This course is designed to be helpful to public speakers, actors, teachers, and to those who wish to overcome self-consciousness and awkwardness and to develop grace of movement, and coordination of mind and body.

(3) I (Fowler)

161—THEORY AND TECHNIQUE OF THEATRE DIRECTING. Practice in directing, theory of plotting and interpreting a play for directors. Study of movement, interpretation of lines, creation of atmosphere, use of stage areas, arrangement of furniture for actors, picturization, balance, use of levels, methods of achieving a climax,

handling of groups, planning of mob scenes. Attention to the psychology of actors, and audience reaction. Each student will have opportunities to direct plays under supervision. This course is designed for future workers in all types of theatres, especially for teachers who will have to direct plays as part of their regular work.

(3) II (Fowler)

162—THEORY AND TECHNIQUE OF THEATRE PRODUCING. Intensive study of the practical problems of play production. Application of modern aesthetic principles and theories to the theatre. Practice and demonstration of non-professional theatre producing. Attention to coordination of the playwright, designer, technical director, electrician, stage manager, and the actor; editing scripts, casting, rehearsal methods, directing techniques, the performance, dramatic criticism, management of "front of the house" including advertising, publicity, business management.

(3) III (Fowler)

163a—PLAYWRITING. This course is designed as a practical course in the writing of plays for production. A study of the principles of dramatic composition. Members of the class will write one act plays first quarter and present them as laboratory exercises on the Guignol stage.

(5) I (Fowler).

163b—PLAYWRITING. A continuation of 163a. Principles of dramatic composition will be continued; full length plays will be written and produced.

(5) II (Fowler)

170a—BACKGROUNDS OF MODERN LITERATURE. A study of the relations between modern philosophic, psychological, and social thought and literature. The European novel will be used as a focus for study, Naturalism, symbolism, impressionism, humanism, expressionism, stream-of-consciousness, and sur-realism will be evaluated. Mann, Proust, Romaine, Yeats, Huxley, Lawrence, Joyce, and others.

(5) I (Galloway)

170b—BACKGROUND OF MODERN LITERATURE. A continuation of 170a.

(5) II (Galloway)

174—WRITING THE FULL-LENGTH PLAY. A study of dramatic composition, construction, writing techniques as applied to the long play and the experimental play. Attention on writing for the educational theatre, the professional theatre, the moving pictures, and living newspaper. Production of the best plays in the class will be given on the Guignol stage. Only those students who have done outstanding work in the one-act play writing course will be invited

to enter this course. New students are accepted on the basis of original work submitted prior to registration.

(5) III (Fowler)

The following courses will be offered as may be requested by students pursuing studies leading to advanced degrees.

201a—LITERARY CRITICISM. The course is mainly an application of the philosophic and historical elements of literary criticism to some period of literature or to the works of some author in a period. It is criticism that essays the unity of all literature, its everlasting growth and the importance of inductive observation of literary phenomena.

(5) I (Farquhar)

201b—LITERARY CRITICISM. A continuation of 201a. Special problems assigned to students.

(5) II (Farquhar)

202a—STUDIES IN CONTEMPORARY DRAMA. This course is an application of the philosophy and history of drama to the modern drama as a whole and to the work of some particular dramatists. It includes a particular study of the work of Ibsen as prerequisite to any other study

(5) I (Farquhar)

202b—STUDIES IN CONTEMPORARY DRAMA. A continuation of 202a. Special problems assigned to students.

(3) II (Farquhar)

210—SEMINAR. BIBLIOGRAPHICAL STUDIES. Required of all candidates for the M. A. degree.

(5) I (Brady)

212a-d—SEMINAR. STUDIES IN PHILOLOGY. Studies in Old English poetry and prose—Cynewulf, Beowulf; Alfred and his circle; Middle English—Chaucer.

(5) (Dantzler)

213a-d—SEMINAR. STUDIES IN EIGHTEENTH CENTURY LITERATURE. Johnson and his circle, Swift, the Romantic Revolt, or the foreign relations of English literature in the eighteenth century will be chosen for extensive investigation according to the needs of the students in the group.

(5) (Galloway)

214a-d—SEMINAR. VICTORIAN LITERATURE. Intensive studies in the social and literary significance of Arnold, Browning, Carlyle, and Ruskin.

(5) (Brady)

215a-d—SEMINAR. CULTURAL STUDIES. These seminars seek primarily to present the problems of criticism, structural and historical. Critical backgrounds will be stressed so that critical studies in English literature may be made.

(5) (Farquhar)

216a-d—SEMINAR. THE CRITICAL PERIOD IN AMERICAN LITERATURE: 1890-1900. A study of the literature of the nineties, with emphasis upon the battle over realism, the loss of early national optimism, the resistance to naturalism, and the development of a genuine American literature. Special attention is given to the esthetic and social problems found in the works of Garland, Henry James, Howells, and Stephen Crane; lesser writers and the magazines of the period are also investigated. One long research paper and one or more short ones are required.

(5) (Knight)

217a-d—SEMINAR. STUDIES IN CONTEMPORARY AMERICAN LITERATURE. A seminar in American literature from 1914 to the present. A preliminary survey of the trends of contemporary American literature is followed by research based upon the work of one writer or one school of writers of the 1930's. One long paper and one or more short ones are required.

(5) (Knight)

GERMAN

The Department of German requires as a prerequisite for the Master's degree, attainment in German equivalent to that required of a German major. The number of hours of German required for the M. A. degree vary depending upon the advanced courses the student may be asked to take and/or permitted to take in related departments. The courses listed below will be given as scheduled and any additional quarter when requested by a sufficient number of students.

101a—NINETEENTH CENTURY LITERATURE. Studies in German Literature of the nineteenth century with special emphasis on representative authors.

Prerequisite: German 3b.

(4) I (Whitaker)

101b—NINETEENTH CENTURY LITERATURE. Continuation of 101a.

Prerequisite: German 3b.

(4) II (Whitaker)

102a—TWENTIETH CENTURY LITERATURE. A study of the trend in German Literature of the twentieth century. Gerhart Hauptmann will be studied in greater detail than his contemporaries. Readings, reports and term paper.

Prerequisite: German 3b.

(4) I (Bigge)

102b—TWENTIETH CENTURY LITERATURE. Continuation of 102a.

Prerequisite: German 3b.

(4) II (Bigge)

103a—LIFE AND WORKS OF GOETHE. This course follows the unfolding of Goethe's genius from his first lyrics through the second part of Faust. His principal literary works will be read and special attention devoted to autobiographical material, letters, and diaries.

(4) III (Hegeman)

103b—LIFE AND WORKS OF GOTHE. Continuation of Course 103a.

(4) IV (Hegeman)

105a-d—INDEPENDENT WORK IN GERMAN. This course is limited to those upper division and graduate students who have shown special proficiency in the department.

Prerequisite: German 3b.

(4) I, II, III, IV (Staff)

110a—GERMAN LITERATURE IN ENGLISH TRANSLATION. The aim of this course is to furnish students not having a reading knowledge of German with an understanding of the content and significance of German literature from the earliest records to the present. Election of this course will not count toward satisfying the University's language requirement, and it may not be elected by any student enrolled in another "100" or "200" course in this department.

(4) I (Staff)

110b—GERMAN LITERATURE IN ENGLISH TRANSLATION. Continuation of Course 110a.

(4) II (Staff)

201a—MIDDLE HIGH GERMAN. This is essentially a literary course with only the necessary minimum of Middle High German grammar. Selections will be read from both the epic and lyric poetry of the period, and reports will be given on assigned topics.

(4) I (Hegeman)

201b—MIDDLE HIGH GERMAN. Continuation of Course 201a.

(4) II (Hegeman)

203a—GERMAN LITERATURE FROM LUTHER TO LESSING. This course traces the principal trends in German life and thought from the Protestant Reformation through the Age of Enlightenment, as they are reflected in the work of the chief authors.

(4) III (Bigge)

203b—GERMAN LITERATURE FROM LUTHER TO LESSING. Continuation of Course 203a.

(4) IV (Bigge)

JOURNALISM

Note.—Prerequisites for journalism majors for the following courses include Journalism 2 and 20a, b.

102—COMMUNITY JOURNALISM. A study of the problems which confront the community weekly and the small city daily.

Prerequisite: Junior standing. (4) I, IV (Portmann)

103—NEWSPAPER ADMINISTRATION. A study of the business circulation, advertising, and accounting divisions of the newspaper with special emphasis on the community newspaper.

Prerequisite: Junior standing. (4) II, IV (Portmann)

104a—COPYREADING AND TYPOGRAPHY. Instruction and practice in newspaper desk work. Lectures and practice in newspaper desk work. Lectures and practice in copyreading and headline writing. Exercises in news typography. No credit for 104a until 104b is completed. Lecture, 1 hour; copyreading laboratory, 4 hours; typography laboratory 4 hours.

Prerequisite: Junior standing. (5) I, II (Tucker and Portmann)

104b—MAKEUP AND TYPOGRAPHY. A continuation of Journalism 104a. Instruction and practice in newspaper deskwork. Copy editing and page makeup. Coordination of editing and typography for makeup practice. Lecture, 1 hour; copyreading laboratory, 4 hours; typography laboratory, 4 hours.

Prerequisite: Junior standing. (5) II, III (Tucker and Portmann)

105—LAW OF THE PRESS. A study of the special laws of libel, copyright, and regulatory provisions that pertain to the press

Prerequisite: Junior standing. (3) II (Plummer)

106—INFLUENCE OF THE NEWSPAPER. A course devoted to the examination of criticisms of the modern press and an evaluation of the influence of the press in the twentieth century. Lectures and readings directed toward the evolution of principles for the guidance of members of the news, editorial, and business staffs of newspapers.

Prerequisite: Senior standing. (4) II (Plummer)

107—EDITORIAL WRITING. A study of editorials, editorial columns, and editorial pages. Publication is encouraged.

Prerequisite: Senior standing. (3) I (Tucker)

108—HISTORY OF JOURNALISM. A study of the rise and development of American journalism and newspapers.

Prerequisite: Senior standing. (4) I (Portmann)

110—SUPERVISION OF HIGH SCHOOL PUBLICATIONS. A study of the problems that confront the adviser of the high school newspaper or magazine. Open to advisers or prospective advisers with consent of the instructor.

Prerequisite: Senior standing. (4) III, IV (Portmann)

111—VERBAL CRITICISM. A study of words and their synonyms with reference to developing accuracy in use of English in Journalistic work.

Prerequisite: Junior standing. (4) I, III, IV (Tucker)

112—CRITICAL WRITING FOR THE PRESS. The function of criticism in journalism. Reviewing of motion pictures, plays, concerts, and books with emphasis upon work for Kentucky newspapers.

Prerequisite: Senior standing. (4) I, II, III, IV (McLaughlin)

115—ADVERTISING TYPOGRAPHY AND LAYOUT. A study of the principles of typographic families and illustrations and decorations that pertain to modern advertising. Practical work with merchants is included in the latter part of the course.

Prerequisite: Senior standing. (4) I, III, IV (Portmann)

118—PUBLICITY. Lectures and practice dealing with the aims and methods of writing news and special articles on the work of schools, colleges, libraries, and social service agencies.

Prerequisite: Senior standing. (4) III, IV (Plummer)

120—SEMINAR IN PUBLIC OPINION. A detailed examination of techniques developed and used by the press in influencing public opinion. Specific cases studied. Latter part of the course devoted to the preparation of newspaper campaigns with current problems of society.

Prerequisite: Senior or graduate standing. (4) III (Plummer)

123a—FEATURE WRITING. Instruction and practice in writing features. Lectures, readings, and reports directed toward discovering, gathering, organizing, writing, and marketing feature articles.

Prerequisite: Junior standing. (3) II (Tucker)

123b—FEATURE WRITING. A continuation of Journalism 123a with emphasis on writing, illustrating, and marketing features for newspaper supplements, trade journals, and other periodicals.
Prerequisite: Junior standing. (3) III (Tucker)

125—MAGAZINE ARTICLE WRITING. Lectures, personal conferences, and practice in writing and submitting material for publication in magazines; study of markets; free-lance writing.
Prerequisite: Senior standing. (4) IV (Plummer)

127—REPORTING PUBLIC AFFAIRS. Instruction and Practice in reporting the news originating in courts and other public institutions and the news or politics, finance, and labor.
Prerequisite: Senior standing. (3) III (Plummer)

LIBRARY SCIENCE

A certificate is granted to graduate students completing satisfactorily 45 quarter credits of professional courses in this department. State and Southern Association requirements of training for the teacher librarian on the lower levels of six and twelve semester hours may be met by careful selection of electives.

GENERAL COURSES

105—READING GUIDANCE. A study of adolescent reading interests and problems; of the nature and content of books available to young people of the secondary school level; of the tools for book selection; and of methods which may be used by teachers to stimulate and direct the reading of young people. Books to correlate with English, social sciences, science and vocational guidance will be stressed especially. *By preparation of an extended individual project the student may raise the course credit to a total of four quarter hours. A non-technical course designed to meet the needs of teachers.*

(3) I, II, III, IV (Staff)

107—FUNCTION AND USE OF THE LIBRARY IN THE SCHOOL. A course open to teachers and students preparing to teach to familiarize them with the functions and use of the school library in modern schemes of education. Designed to acquaint the teacher with the variety and extent of service of the school library, methods by which the library may be adapted to fit the teacher's needs, *reference books and services*; administrative problems which necessitate cooperation of school administrators, teachers and school librarians. *Opportunity is afforded for the development of individual projects which correlate the library with teaching by which the student may earn a total of four quarter hours for the course.*

(3) I, II, III (Staff)

PROFESSIONAL COURSES

126—LIBRARY ADMINISTRATION. A study of the place, function and administration of the library in the modern school and community and of the relationship of the library and librarian to the teachers, pupils and parents. Major supplementary topics discussed: Library planning and equipment; standards; personnel problems; relation of library to outside agencies; business management of the library including budgeting, accounting, attendance; methods of stimulating the use of books, and of handling service. *Supplemented by L. S. 144.* Assigned readings, class discussions, lectures, special reports and projects.

(5) I (Wofford)

128—CHILDREN'S LITERATURE. A survey of the field of children's books with a comparative study of representative types (pre-school to Junior High age). Special study of illustration and physical make-up, editions, book reviewing periodicals, aids in the selection of children's books; and of children's magazines. *Closely correlated with L. S. 132.*

(3) III (Martin)

129a, b—CATALOGING AND CLASSIFICATION. A study of the principles and forms of classification and cataloging as complementary devices of arranging printed materials and of providing a key to their nature, location and contents; with special emphasis on their application to the effective administration of the school library and its major function—service to the reader. Practice work under supervision is required in classifying materials by the Dewey Decimal system and in making a shelf list and a dictionary card catalog by the use of the unit typed or printed card.

(3) I, (4) II (Semmons)

132—LIBRARY WORK WITH CHILDREN. The effective organization and administration of library work with children especially in the elementary school and early years of Junior High School. Emphasizes the place of the library in the social, recreational and educational life of the child, inter-library relationships, equipment, selection and assembly of special materials, reading guidance including the librarian's part in a program of remedial reading, story-telling and special methods of stimulating children's reading.

(3) III (Martin)

133a, b—REFERENCE AND BIBLIOGRAPHY. A study of the essential reference works, particularly those most valuable in school libraries, including dictionaries, encyclopedias, atlases, yearbooks, periodical indexes and reference books on special subjects; of the more important subject and trade bibliographies; of government

documents and vertical file material, and of the standards and methods by which such material is selected, organized and efficiently used.

(3) I, (4) II (Cass)

138—INTERPRETATION OF LIBRARY SERVICES. The course emphasizes media and methods of interpretation of the function, facilities, policy and services of the library in the modern school and community. Public relations, advisory and information services, formal and informal instruction in the use of the library and materials bureaus, library publicity and instructional devices (exhibits, assembly programs, radio, films . . .) printed aids (news releases, library handbooks and manuals, reports . . .) constitute the major topics discussed. Assigned readings, demonstrations, class and individual problems correlated with the Department or practice school program.

Prerequisites: 126, 133a,
150a advisable.

(3) III (Wofford)

139—FIELD WORK. Comparable to practice teaching. Observation of service in libraries in the area and supervised practical work in all departments of the libraries of the University Training School and nearby school systems; supplemented by Seminar discussions. The course is designed to give the librarian-in-training an appreciation of library work as a whole, by affording him opportunities for wide observation, for comparison of libraries and their methods, and for actual practice. Six hours per week.

Prerequisites: 126, 129,
133, 144, 150

(3) III (Wood and Semmons)

144—LIBRARY RECORDS AND METHODS. A course presenting the fundamental knowledge and techniques necessary to the development of efficient library procedures for the acquisition, preparation, care, circulation and use of books, and of non-book materials, especially periodicals, audio visual aids; with emphasis on the importance to effective library service of the application of modern business methods. Assigned readings, class discussion, lectures and demonstrations, special problems and projects.

(3) II (Staff)

150a, b—BOOK SELECTION. A study of principles and standards in the choice of books, periodicals, pamphlets and visual materials for library use. The course includes *practical problems in the selection of books*; a comparative study of the product of American publishers, editions, series, etc.; critical examination of book reviewing periodicals and aids to book selection; the writing of book notes and reviews; the reading and evaluation of typical books, especially in the fields of biography, travel, literature, science, useful and fine arts, and social science. *Course 150b is devoted entirely to the study of the reading interests of young people of high school age and of*

choice of books for them from the point of view of school and individual needs.

(4) I (Martin), (4) II (Wofford)

154—SEMINAR. A survey of the field of library science through a brief study of the modern library movement and its history; of library agencies and media; of outstanding personalities in the field; of standards for professional training and certification; of current economic, social and educational problems of special interest to the librarian. General discussion with special reports on assigned topics.

Prerequisites: 133a, 126;

(3) III (Semmons)

150a desirable.

ROMANCE LANGUAGES AND LITERATURES

The Department of Romance Languages requires, as a prerequisite for the master's degree, attainment in French or Spanish equivalent to that required of an undergraduate major in either French or Spanish at the University of Kentucky.

The Department of Romance Languages offers the Doctor's degree in the following fields: Linguistics, French Literature from the Sixteenth Century to Twentieth, Spanish Literature from the Golden Age to the Twentieth Century, and in Modern Spanish American Literature.

FRENCH

103a.—ADVANCED PHONETICS. A study of the phonetics of Romance Languages with special attention to French. A course to prepare teachers of phonetics.

(OFFERED 1942-43)

(4) I, II (Schick)

103b.—ADVANCED PHONETICS. Continuation of 103a.

(OFFERED 1942-43)

(4) II or III (Schick)

109a.—FRENCH LITERATURE OF THE NINETEENTH CENTURY. A survey of the literature of the period. Frequent lectures on the various authors studied.

(GIVEN 1941-42)

(4) I or II (Ryland)

109b.—FRENCH LITERATURE OF THE NINETEENTH CENTURY. Continuation of 109a.

(GIVEN 1941-42)

(4) II or III (Ryland)

110a.—FRENCH LITERATURE OF THE SEVENTEENTH CENTURY. A survey of the literature except for Moliere, Corneille and Racine.

(OFFERED 1942-43)

(4) I or II (Schick)

110b—FRENCH LITERATURE OF THE SEVENTEENTH CENTURY. The plays of Moliere, Corneille and Racine.
(OFFERED 1942-43) (4) II or III (Schick)

113a—ADVANCED FRENCH GRAMMAR. A study of the grammar and syntax of the French language. Also an introduction to French etymology.
(OFFERED 1942-43) (4) I or II (Ryland)

113b.—ADVANCED FRENCH GRAMMAR. Continuation of 113a.
(OFFERED 1942-43) (4) II or III (Ryland)

114a, b, c, d, etc.—INDEPENDENT WORK IN ROMANCE LANGUAGES. Independent work designed to meet individual needs of students after consultation with the staff.
(OFFERED EVERY YEAR) (4) I, II, III, IV (Staff)

115a—FRENCH LITERATURE OF THE EIGHTEENTH CENTURY. A survey of the literature; the works of representative writers; written reports and assigned readings.
(GIVEN 1940-41)

115b—FRENCH LITERATURE OF THE EIGHTEENTH CENTURY. Continuation of 115a.
(GIVEN 1940-41) (4) II or III (Holmes)

116a—FRENCH LITERATURE OF THE TWENTIETH CENTURY. A study of representative authors and their works; comparison of pre and post war writers.
(GIVEN 1941-42) (4) I or II (Horsfield)

116b—FRENCH LITERATURE OF THE TWENTIETH CENTURY. Continuation of 116a.
(GIVEN 1941-42) (4) II or III (Horsfield)

201a—FRENCH LITERATURE OF THE RENAISSANCE. A study of the works of Villon, Marot, Rabelais, Calvin, Montaigne, Ronsard and others.
(GIVEN 1941-42) (4) I or II (Ryland)

201b—FRENCH LITERATURE OF THE FRENCH RENAISSANCE. Continuation of 201a.
(OFFERED 1941-42) (4) II or III (Ryland)

202a—OLD FRENCH. A study of the grammar and syntax of Old French. Readings from the Chanson de Roland.
(GIVEN 1941-42) (4) I or II (Holmes)

202b—OLD FRENCH. Continuation of 202a
(GIVEN 1941-42) (4) II or III (Holmes)

204a—ROMANCE PHILOLOGY. A study of some of the elements of Vulgar Latin. The phonology, etymology and historical grammar of the Romance Languages. Comparative Romance Philology.

(OFFERED 1942-43)

(4) I or II (Schick)

204b—ROMANCE PHILOLOGY. Continuation of 204a.

(4) II or III (Schick)

205a, b, c, d—SEMINAR IN FRENCH LITERATURE.

(OFFERED EVERY YEAR)

(4) I, II, III, IV (Staff)

SPANISH

104a—SPANISH LITERATURE OF THE SEVENTEENTH CENTURY. Spanish novel and drama of the sixteenth and seventeenth centuries. Syntax and composition. This course enables the student to become familiar with some of the works of the greatest novelists and dramatists of the Golden Age of Spain's literary history.

(GIVEN 1941-42)

(4) I or II (Server)

104b—SPANISH LITERATURE OF THE SEVENTEENTH CENTURY. Continuation of 104a.

(GIVEN 1941-42)

(4) II or III (Server)

106a—SPANISH LITERATURE OF THE TWENTIETH CENTURY. A study of the authors of this century.

(OFFERED 1941)

(3) IV (Holmes)

106b—SPANISH LITERATURE OF THE TWENTIETH CENTURY. Continuation of 106a.

(OFFERED 1941)

(3) IV (Holmes)

112a—SPANISH LITERATURE OF THE NINETEENTH CENTURY. Spanish novel and drama of the nineteenth century; syntax and composition.

(OFFERED 1942-43)

(4) I or II (Server)

112b—SPANISH LITERATURE OF THE NINETEENTH CENTURY. Continuation of 112a.

(4) II or III (Server)

203a—OLD SPANISH. A study of the vocabulary and grammar of Old Spanish contrasting and comparing with Modern Spanish.

(OFFERED 1942-43)

(4) I or II (Server)

203b—OLD SPANISH. Reading in texts of Old Spanish.

(4) II or III (Server)

206a, b, c, d—SEMINAR IN SPANISH LITERATURE.

(OFFERED EVERY YEAR)

(4) I, II, III, IV (Staff)

II. SOCIAL SCIENCES

ARCHAEOLOGY (See Biological Sciences.)

COMMERCE (See Economics and Commerce,)

COMMERCIAL EDUCATION (See Education.)

ECONOMICS AND COMMERCE

DEPARTMENTAL REQUIREMENTS FOR THE MASTER'S DEGREE IN ECONOMICS AND COMMERCE

In addition to the general regulations of the Graduate School the candidate for the Master's degree in economics or commerce must satisfy departmental requirements as outlined below.

He must have a knowledge of course material in accordance with the following distribution:

- (1) The fundamentals of economic history.
- (2) Advanced economic theory which for economics majors must include both current economic theory and its historical development, while for commerce majors it may be confined to modern or current theory.
- (3) A knowledge of elementary statistics,
- (4) A knowledge of introductory accounting,
- (5) Knowledge of a reasonable range of institutional economics courses which must include money and banking and public finance and two additional fields, as for example, labor and public utilities for economics majors, or marketing and management for commerce majors.

With the advice and consent of the major professor and the dean the student may modify the requirement as to the spread of institutional courses in economics and commerce.

The student's major and minor fields in terms of courses must be approved by his major professor.

A thesis must be written in the student's field of major interest.

The student must acquire at least one quarter hour in the economics seminar which is to be taken preferably during the second half of his residence period. By this time he will be ready to begin work on his thesis and report at intervals before the seminar.

The candidate must pass a written comprehensive examination on the range of subject matter and an oral examination on the thesis.

DEPARTMENTAL REQUIREMENTS FOR THE DOCTOR'S
DEGREE IN ECONOMICS

Before taking the qualifying examination through which the student secures the status of a candidate for the degree of Doctor of Philosophy as required by the regulations of the Graduate School, it is expected that the student will have met the requirements for the Master's degree as to general distribution of course material or the substantial equivalent.

The scope of the qualifying examination will include a comprehensive written test of the student's ability to deal with economics materials and will cover the following classes of subject matter: (1) Elementary accounting, statistics, and economic history; (2) advanced economic theory; (3) four other fields in economics or in business; (4) a minor subject closely related to economics, such as business administration, political science, agricultural economics, or sociology.

If the student has passed an examination covering the range of course material required for the master's degree, with the approval of the Committee the examination need not include the subjects in class one.

The oral part of the qualifying examination will be administered ordinarily in connection with a seminar and will test the student's preparation and ability to do research in his chosen field of specialization.

Suggested *fields of study* in economics and commerce and possible courses comprising such fields are as follows:

Economic theory: Commerce 110, 115, 152, 153, 203, 208, 215, and 216; Farm Econ. 202a and b, 203, Mar. and R. F. 111.

Economic history: Commerce 125, 134, 147, 148, 204, and 205.

Statistics: Commerce 107, 142, 149, 150, 152, 210, Math. 120, 122, Psychology 215.

Private finance: Commerce 105, 117, 129, 131, 209, and 211.

Public finance: Commerce 104, 124, 133, 206a and b, 207a and b; Law 153a and b, 161; and Political Science 177a and b.

Industrial Relations: Commerce 102 and 130; Law 142; and Sociology 226.

Utilities and transport: Commerce 103 and 126; Law 150, 161a and b or Political Science 159a and b

Accounting: Commerce 106a and b, 108, 113, 118, 132a and b, and 133.

Industrial management: Commerce 118, 137, 145, and Psychology 112.

Marketing: Commerce 119, 127, 135, 136, 140, and 149, Mar. and R. F. 101.

Risk and risk bearing: Commerce 143 and 144 and Law 145.

Normally two or three courses should represent the minimum level of achievement in each field covered by the qualifying examination, and economic theory should include a course in business cycles.

Of the total quarter hours presented by the candidate for the degree not less than twenty-three quarter hours must represent courses and seminars numbered 200 and above. The final examination ordinarily will be confined to the candidate's thesis subject and its relation to his general course of study.

DESCRIPTION OF COURSES

101—SECRETARIAL OFFICE PRACTICE. This course is designed to provide laboratory and office experience for senior secretarial students. A minimum of 48 hours of office experience under supervision is required.

Prerequisite: Courses 14a and 14b. (2) III (Lawrence)

102—LABOR PROBLEMS. Insecurity, wages and income, substandard workers, industrial conflict; wage theories; the economics of collective bargaining; unionism in its structural and functional aspects; recent developments.

Prerequisite: Course 1. (4) I, IV (Carter)

103—TRANSPORTATION. Railways, waterways, highways, airways. Rates, service, management, regulation.

Prerequisite: Course 1. (4) I, IV (Sullivan)

104—PUBLIC FINANCE. A study of public receipts; public expenditures; the principles of taxation with special reference to their application to the tax systems, federal and state.

Prerequisite: Course 1. (4) I, III, IV (Martin)

105—MONEY AND BANKING. Nature and functions of money; the importance of credit; relation of money and credit to prices; bank deposits and loans; complete study of our national banking system.

Prerequisite: Course 1. (4) II, III, IV (Carpenter)

106a—INTERMEDIATE ACCOUNTING. Principles of financial statement arrangement and content. Corporation accounting. Accounting for consignment and installment sales.

Prerequisite: Courses 7a and 7b. (4) II, IV (Haun and Beals)

106b—INTERMEDIATE ACCOUNTING. Accounting for partnerships, ventures, agencies and branches. Accounting features of insolvent concerns and of consolidations and mergers. Estate accounting.

Prerequisites: Courses 7a and 7 b. (4) III, IV (Haun and Beals)

107—STATISTICAL METHOD. Training in the process of treating multiple phenomena with mathematical exactitude. The

methods are illustrated with material from the fields of psychology, education, economics and sociology. Recitation, one hour; laboratory, four hours.

(4) I (Palmer)

108—ACCOUNTING THEORY. The function of accounting, asset valuation, recognition of revenue and expenses, and classification of equities will be studied with a view to presenting a coordinated body of accounting theory.

Prerequisite: Course 106b.

(3) I (Beals)

109a—BUSINESS LAW. A survey of the principles of contracts, sales, bills and notes, and that portion of the law of torts applicable to business practices.

(4) I, II, IV (Haun and Pittman)

109b—BUSINESS LAW. Continuation of 109a.

(4) II, III, IV (Haun and Pittman)

110—BUSINESS CYCLES. The nature and characteristics of the economic factors which underlie the cyclical fluctuations in business conditions; the methods of business and investment forecasting.

Prerequisites: Courses 1 and an elementary course in Statistics.

(4) I, II, III, IV (Palmer)

111—ADVANCED SALESMANSHIP. This course is designed primarily for high school and college teachers who are required to give such work in their respective schools. Extensive reading; preparation and presentation of sales demonstrations; critical analysis of modern sales techniques and coordination of selling with the related fields of advertising, merchandising, credit management and market research will be considered.

Prerequisite: Course 11 or consent of instructor

(4) IV (McIntyre)

112a, b—INDIVIDUAL WORK IN ECONOMICS. In this course a selected group of advanced students who have at least a standing of 2 are given special problems for intensive investigation. The students are expected to do more work than the usual amount required per quarter hour.

Prerequisite: Course 1.

(1) I, II, III, IV (Staff)

113—AUDITING. The theory of auditing, the valuation of assets, analysis of accounting procedure, and the presentation of statements. Special problems applicable to particular businesses will also be presented.

Prerequisites: Courses 7a and 7b.

(4) III, IV (Haun and Beals)

114—WAR ECONOMICS. A descriptive and analytical study of the problems involved in the transition to a war economy. The

necessity for planning, the peculiar problems connected with strategic materials, the difficulties of maximizing war production, war financing, price control, rationing, priorities, credit control, export control, and postwar reconstruction are examined.

Prerequisite: Course 1. (4) I, III, IV (Carpenter)

115—VALUE AND DISTRIBUTION THEORY. The major emphasis is on current theory.

(4) I (Sullivan)

117—CORPORATION FINANCE. Stocks and bonds, sound fiscal principles concerning the issue of securities, the management of the corporate income, the disbursement of dividends, the creation of sinking funds, and reorganization procedure.

Prerequisites: Commerce 1, 7a, 7b and 9. (4) I, II, III, IV (Ketchum)

118—COST ACCOUNTING. The place of cost accounting in the general field of accounting, special records and cost statistics application to particular businesses.

Prerequisites: Courses 7a, 7b. (4) I, IV (Haun and Beals)

119—RETAIL MERCHANDISING. Selecting a business location, internal layout, departmentalization, merchandising control, store policies toward the public, training and management of personnel, and related subjects.

Prerequisites: Courses 1, 10. (4) II, IV (McIntyre)

121—ECONOMIC GEOGRAPHY OF THE EASTERN HEMISPHERE. The agricultural, mineral, and industrial resources of the Eastern Hemisphere treated intensively by regions; communication and transportation; foreign trade and its effect upon industrial progress in the regions or countries.

Prerequisite: Course 8 or consent of instructor. (4) III, IV (Jennings)

124—STATE AND LOCAL TAXATION. Classified property taxes; separation of sources of revenue, taxation of banks, forests, public utilities, mines, and rural and urban real estate; income, inheritance and sales taxes. Open only to seniors and graduate students.

Prerequisite: Course 1. (4) II, IV (Martin)

125—EVOLUTION OF ECONOMIC INSTITUTIONS. The rise of economic institutions such as property rights, capital formation, contractual labor, et cetera, as influenced by the family, the city, state, nationalism, commerce, finance, the manor, the guilds, and the industrial revolution.

Prerequisites: Course 2 or consent of instructor. (4) II (Jennings)

126—ECONOMICS OF PUBLIC UTILITIES. No credit for this course can be given if the student has credit for Political Science 158. Growth and development of public utilities; valuation; rate-making; financing; the holding company; regulation; current problems; accounting.

Prerequisite: Course 1.

(4) I, IV (Carter)

127—INTERNATIONAL ECONOMIC POLICIES. Modern fallacies respecting foreign trade; free trade; protectionism; preferential tariffs; colonial tariff policies; dumping; commercial treaties; control of raw materials; encouragement of shipping; international investments and the movement of capital; international debts; reparations.

Prerequisite: Course 1.

(4) III (Sullivan)

129—CREDITS AND STATEMENT ANALYSIS. The theory underlying credit-granting; credit administration; analysis and interpretation of financial statements.

Prerequisite: Course 7a.

(3) I (Haun and Beals)

130—LABOR LEGISLATION. The status of labor law, mediation, conciliation, arbitration, the minimum wage, the eight-hour day, unemployment relief, safety and health legislation, and social insurance.

Prerequisite: Course 1.

(4) III, IV (Carter)

131—INVESTMENTS. The general field of investments. Emphasis is placed upon problems which face the investor rather than the seller of securities. Analysis of corporation statements for investment purposes; the security market; market influences on security prices; effect of interest changes on security prices; analysis of specific types of investments; and the development of investment programs.

Prerequisites: Courses 105
and 117.

(4) II (Ketchum)

132a—C. P. A. PROBLEMS. This course is designed to prepare students for C. P. A. examinations. Advanced accounting theory is stressed through the study of a wide range of problems.

Prerequisites: Courses 106a
and 106b.

(3) II (Haun and Beals)

132b—C. P. A. PROBLEMS. Continuation of 132a.

(3) III (Haun and Beals)

133—INCOME TAX PROCEDURE. The preparation of income tax returns for individuals and corporations of all classes and a practical application of principles of accounting.

Prerequisites: Courses 106a, 106b.

(4) II (Haun and Beals)

134—ADVANCED ECONOMIC HISTORY OF THE UNITED STATES. An advanced study of English colonial policy, population

growth, immigration, territorial expansion, agriculture, manufactures, tariff, labor, industrial combinations, commerce, transportation facilities, money and banking, and conservation.

Not open to students who have had Course 3 except when doing graduate work. (4) II (Jennings)

135—ADVANCED MARKETING. The literature and problems in the retail distribution of consumers' goods; wholesale distribution of consumers' goods; industrial goods; sales organization; sales promotion and advertising and price policies.

Prerequisite: Course 10. (3) II (Moore)

136—SALES MANAGEMENT. The case method will be used, supplemented with outside reading and written reports.

Prerequisite: Course 11 or the consent of the instructor. (3) I (McIntyre)

137—PROBLEMS IN MANAGEMENT. Emphasis is placed upon factory management, but an attempt is made to coordinate managerial aspects of business in its entirety. Approximately half of the semester devoted to the consideration and criticism of business reports dealing with various managerial problems and prepared by members of the class.

Open only to seniors of the College of Commerce who are required to take either this course or 138, and to graduate students who have had the necessary prerequisite training. (4) II, III (Carter)

138—INVESTIGATION OF BUSINESS PROBLEMS. The method of surveying, analyzing and actual investigation of problems of business management. It is intended for mature students who have had a thorough training in commerce and who are capable of doing research work under the guidance of the instructor. The work will involve the statistical analysis of data secured through interviews, questionnaires and otherwise, and the use of the results in determining a satisfactory solution.

Open only to seniors of the College of Commerce who are required to take either this course or 137, and to graduate students who have had the necessary prerequisite training. Prerequisite Course 150 or 151. (4) III (Palmer)

140—ADVERTISING CAMPAIGNS. The procedure necessary for developing an advertising campaign; a study of successful adver-

tising campaigns as used by leading business houses throughout the country; and the planning and execution of an advertising campaign in conjunction with some local business house. The advertising campaign worked out by the student will be checked and tested for its effectiveness.

Prerequisite: Course 11, (4) I (McIntyre)
Psychology 5, or the consent
of the instructor.

142—INDEX NUMBERS. The problems of sampling, selection of formula, and weighting in the construction of index numbers; a study of the construction and use of the common index numbers of prices and production.

Prerequisite: An elementary (2) II (Palmer)
course in statistics.

143—LIFE INSURANCE. Economics of life insurance; organization and control; special forms of life insurance; fundamental principles of rate-making.

Prerequisite: Course 1. (4) I, IV (Carpenter)

144—PROPERTY AND CASUALTY INSURANCE. Public control; nature of contracts; analysis of reserve functions and rate-making processes.

Prerequisite: Course 1. (4) II (Carpenter)

145—PROBLEMS IN OFFICE MANAGEMENT. The theories and principles underlying office management and control. The course is designed for superintendents of schools, high school principals, registrars, office workers, and others.

(4) III, IV (Lawrence)

147—AMERICAN BUSINESS LEADERS. Biographical sketches of a selected list of men including their business achievements and their relationships to the economic and social life of their time.

Prerequisite: Course 3 or (2) I (Jennings)
consent of instructor.

148—EUROPEAN BUSINESS LEADERS. Biographical sketches of a selected list of men including their business achievements and their relationships to economic and social life of their time

Prerequisite: Course 2 or (2) II (Jennings)
consent of instructor.

149—MARKET ANALYSIS. Training in the application of scientific method to research in fields of marketing. Major marketing investigation will be conducted by the class.

Prerequisites: Com. 10 and a (4) III (McIntyre)
course in statistics.

150—BUSINESS STATISTICS. Advanced statistical techniques with special application in economics and business; a survey of the work of government and private research organizations; a study of general research methods, indicating the importance of each type; and training in the application of statistical and other techniques to business data.

Prerequisite: Mathematics 24, Elementary Theory of Statistics. (3) I, II, III, IV (Palmer)

151—SECRETARIAL STATISTICS. The rules of accuracy in computation, tabulation of data, graphing of business data, organization charts, statistical maps, the operation of calculators and other statistical machinery, the sources of statistical material of interest to business data.

Prerequisite: Com. 17 a, Secretarial Practice Typewriting. (4) II (Palmer)

152—INCOME AND WEALTH. The definition of these concepts, the relations between them, their relations to economic theory, their measurement on a national regional, local, corporate, and individual basis, with particular reference to Kentucky, and the causes of differences in income and wealth between different localities.

Prerequisite: Com. 1 and an elementary course in Statistics. (2) I (Palmer)

153—THE ECONOMICS OF CONSUMPTION. The place of consumption in economic theory with special emphasis upon its relation to the phases of the business cycle including the institutional background of our consumer habits; sources of information on consumption; and government regulation of consumer standards.

Prerequisite: Junior standing. (3) II (Sullivan)

154—URBAN REAL ESTATE. Urban land economics; the growth and planning of urban communities; survey of the real estate business and institutions; essentials of real estate law and contracts; the financing of real estate transactions; the problem of property valuation and appraisal; the management of real estate properties; the problem of ownership versus rental; the problem of real estate securities as investments; governmental activities.

Prerequisite Course 117. (4) III (Ketchum)

202a-f—SEMINAR. An extended original investigation of some specific topic with a view to giving training in methods of research and studying intensively a particular subject in the field of economics.

(1) I, II, III, IV (Palmer and others)

203—HISTORY OF ECONOMIC THOUGHT. A survey of the history of economic thought from the ancient period to about the end of the Classical School.

Prerequisite: Course 1. (5) I (Wiest)

204—ECONOMIC HISTORY OF THE UNITED STATES PRIOR TO 1860. An examination of original sources and class reports; intensive investigation of all the subjects in detail prior to 1860.
Not open to students who have (3) I (Jennings)
taken Course 134 for graduate credit.

205—ECONOMIC HISTORY OF THE UNITED STATES SINCE 1860. A continuation of Course 204, but may be taken independently.
Not open to students who (3) II (Jennings)
have taken Course 134 for
graduate credit.

206a—MUNICIPAL FINANCE. City and county budget and related problems are studied in reports and seminar
(2) I (Martin)

206b—MUNICIPAL FINANCE. City and county debt, purchasing, treasury, and revenue problems are studied in reports and seminar.
(2) II (Martin)

207a—PROBLEMS IN PUBLIC FINANCE. Depending on varying needs of public finance students from time to time, specific subject matter will be selected for study. Each student's report will indicate the class of problems intensively examined.
(2) II (Martin)

207b—PROBLEMS IN PUBLIC FINANCE. Continuation of 207a.
(2) III (Martin)

208—ADVANCED ECONOMIC THEORY. A critical examination of current literature on economic problems and policies.
Prerequisite: Course 1. (4) III (Sullivan)

209—COMPARATIVE BANKING AND MONETARY SYSTEMS. A comparative study of banking systems and monetary policies, in the principal countries of the world; emphasis is placed upon present-day organization; the commercial bank with its monetary functions is the main theme of the course, but brief surveys of investment banking systems are also attempted.
(4) II (Carpenter)

210—RESEARCH STATISTICS. The place of statistics in research method, the theory of statistical averages, the application of advanced statistical methods to economic data, the statistical meaning of economic concepts and the testing of economic theory.
Prerequisites: An elementary (2) I (Palmer)
course in statistics and
consent of instructor.

211—ADVANCED MONEY AND BAKING. A general survey of the subject is attempted with the emphasis upon its historical and theoretical aspects.

(4) III (Carpenter)

215—SURVEY OF ECONOMIC THEORY SINCE THE AUSTRIAN SCHOOL. This course is virtually a continuation of Course 203.

(4) II (Wiest)

216—BUSINESS CYCLE THEORY. An advanced course including a reading of important theories and studies of the business cycle.

Prerequisite: Com. 110.

(2) III (Palmer)

EDUCATIONAL PSYCHOLOGY (See Education.)

FARM ECONOMICS (See Agriculture.)

HISTORY

THE MASTER'S DEGREE IN HISTORY

Students should submit evidence of good undergraduate preparation in the specific subject in which they propose to take the degree. In general, twenty-four quarter hours in History will suffice.

Unity of purpose and coherence in planning the program is an essential. At least one course should be of the seminar type, with some training in methods of graduate study.

Of the total number of hours, two-thirds will be expected when a minor is offered in addition to the thesis.

A creditable thesis is required in all cases, giving evidence of ability to investigate a specific topic, with a critical bibliography. The examination will include courses, thesis, and general knowledge of related material.

THE DOCTORATE IN HISTORY

Those who seek the doctorate in History should follow carefully the general directions governing the subjects of residence and courses as stated in the first part of this Bulletin.

The *applicant* does not become a *candidate* until he has passed the qualifying examinations, satisfied the language requirements, and made formal application to be so enrolled.

All further work for the doctorate in history is under the direction of a committee composed of members of the staffs of the candidate's major and minor departments appointed by the Dean of the Graduate School. The chairman will be the major professor under whose direction the candidate expects to write his dissertation. The student should consult this person at his earliest convenience. This committee with the student will outline his course of study, advise with him throughout his residence, conduct the comprehensive examination, and generally supervise the writing of his dissertation.

COMPREHENSIVE EXAMINATION

At the completion of his residence work, or sooner if his advisory committee shall so direct, the candidate will be required to take a *comprehensive examination* upon his fields of study in his major and minor departments. The comprehensive examination will consist of written or oral examinations of eight hours' duration upon his fields of history and of two to three hours in those of his minor departments. There will also be a general oral examination of not less than two hours. Throughout, the candidate will be expected to show that his knowledge is of a definite and thorough character.

FINAL EXAMINATION ON THESIS AND ITS FIELD

After acceptance of the dissertation by his advisory committee and by the Dean of the Graduate School the candidate will be expected orally to defend his dissertation before the committee provided by the Dean of the Graduate School for that purpose.

History is generally viewed as falling into certain well defined periods or movements. For this purpose the fields of history have been assigned to the following four divisions:

DIVISION I

The Ancient World

The Middle Ages

The Renaissance and Reformation.

DIVISION II

Modern Europe.

English History.

The British Empire.

The Expansion of Europe.

DIVISION III

The Colonies and the United States through Reconstruction.

Recent United States.

Regional History.

DIVISION IV

The Far East.

History of Latin America.

The History of Culture (Thought, Science, Religion).

With his advisory committee the candidate will select four fields usually from divisions I, II and III, two of which should be selected from that division in which the field of his dissertation lies, and one each from two other fields. The candidate may substitute with the approval of his committee for one of these a field from division IV.

The extent and content of his work in his minor department will be determined by the candidate's advisory committee after consultation with the departments concerned.

The following courses are offered by the Department:

100a—THE DIPLOMACY AND FOREIGN POLICY OF THE UNITED STATES TO 1898. A survey designed to acquaint the student with the principles of American foreign policy and their historical evolution in practice.

(4) II (Dupre)

100b—THE DIPLOMACY AND FOREIGN POLICY OF THE UNITED STATES SINCE 1898. A continuation of course 100a.

(4) III (Dupre)

105—COLONIAL AMERICA. A study of the beginnings of the English colonies, the colonial background, political, social and economic development, extension of their frontiers, intercolonial wars, and external relations with the Dutch, French and Spanish. Emphasis on imperial policies and imperial control and the controversies arising therefrom.

Prerequisite: One year of history in College.

(4) II (Knapp)

106a—COLONIAL LATIN AMERICA. A survey of the founding and development of the Latin American Colonies and their struggle for independence.

(3) II (Knapp)

106b—LATIN AMERICAN REPUBLICS. This course will include a study of the political, economic, and social institutions, and problems of the Latin American Republics from the attainment of independence to the present.

(3) III (Knapp)

114—THE RENAISSANCE IN THE SOUTH. A study of the Italian Renaissance from 1300 to 1500. The southern states and cities of Italy and their scholars; general movements, political and other; rise of the modern spirit along the several lines of art and science, education, philosophy, commerce and exploration. Text, lectures, reports.

(4) I (Tuthill)

115—THE RENAISSANCE IN THE NORTH. This course will properly follow Course 114 in tracing the awakening of the new spirit in France, England, and Germany, and in sketching the background of the Reformation period.

Prerequisites: History 4a-b.

(4) II (Tuthill)

119a—THE FRENCH REVOLUTION AND NAPOLEON. A study of the period 1789-1815 in Europe, treating of the appearance and manifestation of the spirit of revolt. Conditions in France and adjoining nations, the evolution of France from 1778 to 1795 and sub-

sequent changes under Napoleon. Open to juniors, seniors and graduate students, with supplementary reading for the latter.

(4) III (Tuthill)

119b—THE NINETEENTH CENTURY. Starting with the fall of Napoleon, this course treats the successive political changes in 1823, 1830, 1848 and 1871, together with the outstanding commercial, cultural and scientific features of European life after 1815; the expansion of Europe in Africa and Asia, and the reactions upon the great states of the world.

(4) II (Tuthill)

120—THE TWENTIETH CENTURY. A study of recent and contemporary movements, chiefly in Europe. The rise and conflict of the chief colonial empires; European interference and control in Asia and Africa; forces and elements leading up to the great war; general features of the past twenty-five years, including socialism, public education, invention and discoveries. Reports on current literature and assigned reading on a liberal scale.

(4) III (Tuthill)

131a—ENGLISH CONSTITUTIONAL HISTORY TO 1603.

(4) I (Hall)

131b—ENGLISH CONSTITUTIONAL HISTORY SINCE 1603.

(4) II (Hall)

134—HISTORY OF CANADA. A brief survey of Canada under the French, increasing emphasis on the development of Canada under British control. Evolution of the Dominion, relations with the United States, and British Commonwealth of Nations. Lectures, discussion, and reports.

Prerequisite: One year of college history.

(4) (Hall)

135a—THE BRITISH EMPIRE TO 1860. Review of the various elements affecting Great Britain and her Empire between 1783 and 1860. The Industrial Revolution; the French Revolution; Development of British Sea Power. The early growth and development of Canada, Australia, New Zealand, South Africa, and India. Lectures, class discussions, readings, reports. Three hours a week.

135b—THE BRITISH EMPIRE SINCE 1860. A continuation of 135a. Great Britain and the growth of the Dominions and the Commonwealth since 1860. Particular attention given to the history of the Canadian Dominion and the extension of the idea to other portions of the Commonwealth; their relations with the rest of the World. Three hours a week.

(4) II (Hall)

138—BRITISH SOCIAL HISTORY DURING THE TUDOR PERIOD, 1485-1603. A study of British life, manners, and customs in town and country. Particular emphasis will be placed upon the Age of Elizabeth, with political events subordinated to social changes. Lectures, discussions, and reports. Two hours a week.

(3) III (Hall)

140a, b, c, d—INDIVIDUAL WORK. Under special conditions selected students may investigate special problems, making weekly reports to the instructor.

(3) (Staff)

147—RECENT HISTORY OF THE UNITED STATES. An intensive study of the principal movements and episodes in the history of the people of the United States from the Spanish-American War to the present.

Prerequisite: One year of American history.

(4) I (Knapp)

151a—THE AMERICAN FRONTIER. A course dealing specifically with American expansion westward to California. The westward movement in respect to population and expansion—political, economic, social, and cultural; the process of national adjustment; the contributions of each succeeding period. 151a will consider the early West.

(4) I (Clark)

151b—THE AMERICAN FRONTIER. A continuation of 151a, devoted especially to the trans-Mississippi West.

(4) II (Clark)

166—DIVISION AND REUNION, 1850-1877. An intensive study of sectionalism in the United States from 1850 to 1877. The political, military, economic, industrial and educational aspects of the period of the Civil War, and Reconstruction. Emphasis on the problems of the Border States.

(4) III (Knapp)

171—THE EIGHTEENTH CENTURY. The 18th century in Europe. A study of the benevolent despots, their times and circumstances, their significance in Modern Europe.

Prerequisite: Course 4a or equivalent.

(3) II (Lunde)

175—THE DANUBIAN STATES. A study of the post-war politics and culture of Middle Europe and the Near East.

(3) (Dupre)

176—THE THIRD FRENCH REPUBLIC. A study of the parties, politics, administration, diplomacy, economy, social movements, and general culture of France from 1870 to the present. A reading knowl-

edge of French will be helpful to graduate students. Lectures, readings, reports, and discussions.

(3) IV (Dupre)

177—GERMANY SINCE 1870. A study of Germany under Bismarck, the Weimar Republic, and Hitler.

(5) I, III (Dupre)

180a—HISTORY OF THE NEW SOUTH. The evolution of southern life and society, agrarian politics, relationships with other sections, industrial growth, and new leadership.

Prerequisite: History 5b.

(4) III (Clark)

180b—HISTORY OF THE NEW SOUTH.

(4) IV (Clark)

184—THE GEOGRAPHIC BASIS OF AMERICAN HISTORY. A study of the relationship of geography to history and the influence of physiography upon the settlement and growth of various regions of the Americas.

(3) (Knapp)

COURSES IN THE "200" GROUP

These courses are for graduate students only. They are content courses presented by the lecture and discussion method, and as such are distinct in character from the "300" group of courses which are concerned with problems and practice of research.

202—THE AMERICAN REVOLUTION.

(4) (Knapp)

206—AMERICAN CONFEDERATION.

(4) (Knapp)

247a, b, c, d—SEMINAR IN RECENT UNITED STATES HISTORY. Intensive studies in the political, social, and cultural history of the United States since 1914. Different topics will be stressed in rotation.

(4) (Knapp)

280—EUROPEAN HISTORIOGRAPHY. A study of the principal collections of material bearing on European history together with guides to books and periodicals in various fields. Periods will be chosen according to the needs of students. Lectures, discussions, problems.

(3) III (Tuthill)

281—AMERICAN HISTORIOGRAPHY. A study of the principal historians of United States and their works; periodical and monographic literature; public documents and collections of source materials; guides and methods of historical investigations. Lectures, discussions, problems.

(3) I (Knapp)

COURSES IN THE "300" GROUP

SEMINARS.—Basically research in character. These are not content courses. They provide laboratory training in historical research (collection and critical analysis of bibliography, note-taking and organization of materials, and the presentation of a properly documented thesis). It is desirable that the student take the Senior Seminar before enrolling in "300" courses. Four quarter hours credit. Two class hours. One conference hour.

300a, b, c, d—SEMINAR IN AMERICAN DIPLOMACY.
(4) (Dupre)

315a, b, c, d—HENRY CLAY AND HIS TIMES
(3) (Knapp)

320a, b, c, d—ORIGINS OF THE GREAT WAR.
(4) III (Tuthill)

331—SEMINAR IN MODERN BRITISH HISTORY.
(4) II (Hall)

342—ADVANCED SEMINAR IN HISTORY OF KENTUCKY. The development of Kentucky as a western commonwealth. Emphasis on economic and political phases from the 18th century to the present, with writing of papers based upon research among documents and other source material.

Prerequisites: Courses 5a and 40, and consent of instructor. (3) (Clark)

350a-d—SEMINAR IN THE FRENCH REVOLUTION.
(4) (Dupre)

HISTORY OF EDUCATION (See Education.)

MARKETS AND RURAL FINANCE (See Agriculture.)

LAW (See Law.)

PHILOSOPHY

101a—HISTORY OF PHILOSOPHY. A critical survey of Greek Philosophy and the Philosophy of the Middle Ages.

[OFFERED 1942-43] (4) I (Kuiper)

101b—HISTORY OF PHILOSOPHY. A critical survey of modern Philosophy from the Renaissance to contemporary times.

[OFFERED 1942-43] (4) II (Kuiper)

102—CONTEMPORARY PHILOSOPHY. A study of contemporary philosophical tendencies, notably naturalism and empiricism, pragmatism, idealism and neo-scholasticism. Bertrand Russell, John

Dewey, George Santayana, A. N. Whitehead and Henri Bergson are among the philosophers to be discussed.

[OFFERED 1942-43]

(4) III (Kuiper)

110—THE MAKING OF THE MODERN MIND. A survey of the intellectual and cultural background of the present age. This course considers the most revolutionary cultural, religious and scientific developments of the last three centuries and their effect upon the philosophic outlook of modern man.

[GIVEN 1941-42]

(4) (Kuiper)

115—INTERMEDIATE LOGIC. A second course in Logic, including the logic of classes, of relations, of propositions and propositional functions, the theory of deductive systems; and a consideration of the rival schools of contemporary logical theory.

[GIVEN 1941-42]

(4) (Kuiper)

118—PLATO AND ARISTOTLE. A study in English of the chief dialogues of Plato, and of Aristotle's *Ethics, Politics, and Metaphysics*.

[GIVEN 1941-42]

(4) (Kuiper)

120—GREAT RELIGIONS OF THE WORLD. A study of six religions in relation to the culture in which they arose: Shinto, Hinduism, Buddahism, the religion of ancient Greece, the religion of Israel and Judaism, and Christianity.

[OFFERED 1942-43]

(4) IV (Kuiper)

201a—SEMINAR IN PHILOSOPHY. One two-hour meeting a week for discussion of current developments in Philosophy as found in recent books as well as in periodicals. Readings and reports.

[OFFERED 1942-43]

(2) I (Kuiper)

201b—SEMINAR IN PHILOSOPHY. Continuation of 201a.

[OFFERED 1942-43]

(2) II (Kuiper)

210a—TYPES OF LOGICAL THEORY. An intensive study of recent and contemporary contributions to logical theory; C. I. Lewis, R. Carnap, John Dewey and others.

(4) (Kuiper)

210b—TYPES OF LOGICAL THEORY. Continuation of 210a.

(4) (Kuiper)

220a—RESEARCH IN PHILOSOPHY.

(4) (Kuiper)

220b—RESEARCH IN PHILOSOPHY.

(4) (Kuiper)

PHILOSOPHY OF EDUCATION (See Education.)

POLITICAL SCIENCE

Graduates of accredited colleges may become candidates for a master's degree in Political Science. Students who are deficient in social science background must make up their deficiencies by taking such additional courses as may be recommended by the Department. At least one course each in Political Theory and Constitutional Development is required of every candidate. This requirement will be waived in the case of candidates who have had adequate undergraduate courses in these two fields. The graduate work must include at least three of the six fields of political science listed below. At least twenty-four of the thirty-six quarter hours required for the master's degree must be taken in political science. The remaining hours may be taken in one or more related fields, upon approval of the major professor. Nine quarter hours of the work in political science must be in courses open only to graduate students.

Admission to candidacy for the doctor's degree in Political Science is governed by the regulations of the Graduate School, which require a qualifying examination during the second year of graduate work. Of the total quarter hours presented by the candidate at least eighteen quarter hours must be in courses not open to undergraduates. At the end of his course work the candidate must pass a preliminary written and oral examination in the following fields: Political Parties and Public Opinion, Public Administration, Theory, Comparative Government, Public Law and International Law and Diplomacy, with the exception in each case of the field in which the candidate writes his dissertation. A minor in a related field may be substituted for two of the six fields of political science, subject to the approval of the other department and of the candidate's committee. Candidates for the doctor's degree in a related department desiring a minor in political science must pass a preliminary examination in two of the six fields of political science. At least nine quarter hours of the work in political science must be in courses not open to other graduates. Candidates for either a major or a minor in political science are expected to have a knowledge of the related social studies as a background for the work in political science.

Upon completion of the above requirements the candidate must take an oral examination covering primarily the dissertation and the field in which the dissertation falls.

I. POLITICAL PARTIES AND PUBLIC OPINION

170—POLITICAL PARTIES. An analysis of public opinion and pressure groups; a survey of the history, organization methods and functions of political parties in the United States; first hand studies of the individual's participation in government.

[OFFERED EVERY YEAR]

(5) I, IV (Shannon)

173—PUBLIC OPINION. The concept of public opinion; public opinion as an agency of political control; influence of the press, radio and other means of influencing public opinion; propaganda technique and control; competition of pressure groups for political influence.
[OFFERED EVERY YEAR] (5) II, IV (Shannon)

Related Courses in Other Departments

Psychology 104—Social Psychology.
Sociology 15—Social Control.

II. PUBLIC ADMINISTRATION

172—KENTUCKY GOVERNMENT AND CONSTITUTION. An intensive study of government and administration in Kentucky. The course is intended primarily for teachers of civics in the secondary schools and for teachers of government in colleges.
[NOT OFFERED 1941-42] (5) IV (Manning)

174—PUBLIC WELFARE ADMINISTRATION. An intensive study of public welfare agencies of the state and local units, with emphasis on the problems of relief, rehabilitation, public and private control, and unified administration.
[NOT OFFERED 1942-43] (5) III (Manning)

177a—PRINCIPLES OF PUBLIC ADMINISTRATION. A functional study of governmental administration, with emphasis on the theory and practice of administration, with evolution of administrative organization, and staff functions of government, including personnel and financial administration.
(5) I (Shannon)

177b—PUBLIC ADMINISTRATION. A continuation of Political Science 177a, with emphasis on the line functions of government, including the protection of life and property, judicial administration, law enforcement, public health, welfare, education, conservation and business regulation
(5) III (Reeves)

Related Courses in Other Departments

Economics 102—Labor Problems.
Economics 104—Public Finance.
Economics 124—State and Local Taxation.
Economics 130—Labor Legislation.
Law 153—Taxation.
Law 167—Administrative Law.
Psychology 112—Personnel Administration.
Sociology 107—Community Welfare Work.
Sociology 112—Community Organization.

III. THEORY

171a—EARLY POLITICAL THEORY. The political theories of Plato, Aristotle, Roman Political Thought, Thomas Aquinas, Dante. [OFFERED EVERY YEAR] (5) I (Shannon)

171b—MODERN POLITICAL THEORY. The theories of Machiavelli, Bodin, Grotius, Hobbes, Locke, Montesquieu, Rousseau and of the American and French Revolutions, the English Utilitarians, Democratic Political Theory, Socialism, Fascism, Anarchism, Syndicalism, Guild Socialism, Communism. [OFFERED EVERY YEAR] (5) II (Shannon)

Related Courses in Other Departments

Philosophy 101a and 101b—History of Philosophy.
Philosophy 110a—Making of the Modern Mind.

IV. COMPARATIVE GOVERNMENT

155a—COMPARATIVE GOVERNMENT — PARLIAMENTARY DEMOCRACIES. A study of the government of England, Ireland and the British self-governing dominions. [OFFERED 1942-43] (5) II, IV (Trimble)

155b—COMPARATIVE GOVERNMENT — CONTEMPORARY DICTATORSHIPS. A study of the government of Europe including France and Switzerland and the dictatorship of Italy, Germany and Russia. [OFFERED 1942-43] (5) III (Trimble)

V. PUBLIC LAW

159a—AMERICAN CONSTITUTIONAL DEVELOPMENT, 1787-1868. Chronological survey of the making of the constitution and its interpretation through principal statutes and judicial decisions; some emphasis upon the economic and social interests which influenced this growth. [OFFERED EVERY YEAR] (5) I, IV (Trimble)

159b—AMERICAN CONSTITUTIONAL DEVELOPMENT. From the adoption of the Civil War Amendments to the present time. Congressional policies embodied in social-economic legislation; doctrines developed by the Supreme Court. Analysis and criticism of chief cases on "due process," congressional powers and changes in the federal systems. [OFFERED EVERY YEAR] (5) II, IV (Trimble)

176—LEGISLATION. A functional study of legislative bodies and the process of legislation. Emphasis is placed on the organization of legislative assemblies, the operation of the committee system, the actual process of enactment, including the drafting of bills, and the external controls over legislation. [OFFERED 1942-43] (5) II (Reeves)

Related Courses in Other Departments

History 131a-131b—English Constitutional History.

Law 149—Municipal Corporations.

Law 161a-161b—Constitutional Law I and II.

VI. INTERNATIONAL LAW AND DIPLOMACY

101—LATIN AMERICAN RELATIONS. The relations between the United States and the Latin American countries, the Monroe Doctrine, Pan-Americanism, Pan-Hispanism, Latin America and the League of Nations.

[OFFERED EVERY YEAR]

(5) III, IV (Edelmann)

150—INTERNATIONAL LAW. Sources and sanctions of international law, recognition, intervention, jurisdiction, nationality, protection of citizens abroad, diplomatic intercourse of states, the making, termination and interpretation of treaties, the treatment of aliens and international claims.

[OFFERED EVERY YEAR]

(5) II (Edelmann)

160—AMERICAN FOREIGN RELATIONS. Chief principles and problems of American Foreign policies; the part of the House, the Senate, the Constitution and the President in the initiation, conduct and control of foreign policies; the organization of the Department of State, the selection of personnel, the status and duties of foreign service officers.

[NOT OFFERED 1942-43]

(5) II, IV (Vandenbosch)

165—WORLD POLITICS. A study of diplomatic history before and after the war with particular stress on the importance of alliances, imperialism, nationalism, militarism, and secret diplomacy. The latter part of the course deals with the development of international conferences, the League of Nations and the recent foreign policy of the important nations.

[OFFERED EVERY YEAR]

(5) I, IV (Edelmann)

168—GOVERNMENTS AND POLITICS OF EASTERN ASIA. An introductory study of the political institutions of China, Japan, the Philippines, the Dutch East Indies and India. Constitutional principles, governmental organization, the party systems, current political issues and contemporary problems of international relations.

[NOT OFFERED 1942-43]

(5) II, IV (Vandenbosch)

Related Courses in Other Departments

Economics 127—International Economic Policies.

History 100a-100b—The diplomacy and foreign policy of the United States.

History 190a-190b—The Far East.

History 120—The Twentieth Century.

Law 164—Conflict of Laws.

Courses Open Only to Graduate Students

- 202—NATIONAL AND REGIONAL PLANNING. A survey of conditions leading to efforts at planning. A study of the theories and principles of planning; a detailed investigation of the regional life of selected areas.
[OFFERED 1942-43] (5) III, IV (Shannon)
- 204—INTERNATIONAL RELATIONS AND ORGANIZATION. Theories of international relations; origin and development of international organizations; structure, operation and problems of international organizations.
[OFFERED 1942-43] (5) II, IV (Vandenbosch)
- 205—PACIFIC SETTLEMENT, WAR AND NEUTRALITY. Methods of pacific settlement; methods short of war; belligerent and neutral rights at sea; recent trends; current problems and possible solutions.
[NOT OFFERED 1942-43] (5) III, IV (Vandenbosch)
- 206—SPECIAL PROBLEMS IN PUBLIC ADMINISTRATION. A research course in selected problems of public administration. The problems will be selected in accordance with the needs and desires of students registering for the course.
[OFFERED 1942-43] (5) II, IV (Shannon)
- 210—SUPREME COURT AND POLITICS. Intensive study of the federal judiciary in the political and economic order. Factors in decision-making; personnel of the court; relations to other departments and processes of the national government and to the states; trends in the principle of judicial review.
[NOT OFFERED 1942-43] (5) I, IV (Trimble)
- 211—THE CONSTITUTION AND CIVIL RIGHTS. The American conception of civil rights as expounded by the constitutional fathers and as interpreted by the courts. The social, economic and political aspects and implications of these rights. Special attention will be given to the decisions of the United States Supreme Court.
[OFFERED 1942-43] (5) I, IV (Trimble)
- 213—FEDERAL CENTRALIZATION. A study of the shifting of power and control from the states to the federal government as a result of the economic and social development of the country and the resulting alteration of our constitutional system. Special attention will be given to the development of such provisions of the Constitution as the commerce clause, the taxing clause and of grants-in-aid and the more important measures of the New Deal.
[NOT OFFERED 1942-43] (5) I (Trimble)
- 217—CONTEMPORARY AMERICAN DIPLOMATIC PROBLEMS. The Monroe Doctrine; Pan-Americanism; non-recognition

doctrine; problem of the Philippines; Far Eastern policy; non-belligerency; American-Canadian relations; control of foreign relations.

(3) II, IV (Vandenbosch)

271—CONTEMPORARY POLITICAL THEORY. Seminar. An intensive investigation of political ideologies since the Industrial Revolution. Emphasis is placed upon the attack and defense of democracy, socialism, fascism, and pluralism.

[OFFERED 1942-43]

(3) IV (Shannon)

PSYCHOLOGY

The Department has accumulated for a number of years a mass of test records of the intelligence, special abilities and achievements of students in all the colleges of the University. It also has estimates of personal traits and the histories of many students. Taken together, these afford a rare opportunity for graduate work in student personnel problems. The director and executive secretary of the University Personnel Bureau are also affiliated with the Department.

In order to provide training for guidance counselors in the schools and colleges of the State this department has arranged, in cooperation with the College of Education, a comprehensive plan for training in this field including practice and research. In cooperation with the registrar it has also paid special attention to the preparation of registrars.

Another field in which special facilities are provided is that of the psychological clinic. The Department has maintained such a clinic for years. It has established close contact with the public schools, the welfare agencies, the Eastern State Hospital for the Insane, the reformatory institutions, and the State Institution of the Feeble-Minded, all of which are located at or near Lexington.

In cooperation with the Junior League of Lexington the Department has also established a Child Guidance Service which affords additional opportunities for the study and observation of both normal and maladjusted children.

The Department undertakes special research in business and industrial personnel problems and in the development and training of normal children. It is well equipped for experimental and statistical studies in these fields. Connected with the Department is a Kentucky Station of the Psychological Corporation, a national organization for conducting authoritative work in applied psychology.

The experimental laboratory is especially equipped for the objective determination of emotions, their relation to perceptual acts, sets, drives, conditioning, etc.

An animal behavior laboratory is also provided and equipped for class and research work on lower animals. Standardized strains of white rats are available.

Apparatus, test equipment, and library facilities are suitable for advanced work in the list of courses which follows. For graduate majors in the Department, it is assumed that the student has had fundamental training in general psychology, and in biological or social sciences.

104—SOCIAL PSYCHOLOGY. Description and explanation of social phenomena in terms of the original and acquired reaction systems of the individual. So-called types are characterized in respect to the social problems they present. Topics given special consideration: crowds, mob behavior, propaganda, and nationalism.

(4) III (Dimmick)

107—PSYCHOLOGICAL INTERPRETATION (Of the Unusual). Unusual human activities and experiences, including hypnotism, thought transference, spirit communications, psycho-therapy, and other sub-conscious phenomena are considered from the point of view of scientific evidence. An attempt is made to understand the conditions for creative work in literature, art and science.

(4) III (Beaumont)

109—EXPERIMENTAL PSYCHOLOGY. THE SENSES. The nature of the adequate stimuli, the sensory responses, and the techniques of measuring thresholds are the chief topics. Some consideration is given to spatial and form responses. One hour lecture and four hours laboratory a week.

(3) I (White)

110—EXPERIMENTAL PSYCHOLOGY. PERCEPTUAL PROCESSES. Attention, association, thinking, feeling, and problem solving are investigated experimentally. The primary purpose of the experiments is to acquaint the student with the laboratory techniques involved in the study of the above concepts. One hour lecture and four hours laboratory a week.

(3) II (White)

111—MENTAL MEASUREMENTS. An analysis and interpretation of individual and group tests of intelligence, aptitude, skill, and achievement. The history and significance of the testing movement; the construction and evaluation of group tests.

(5) I (Asher)

112—PERSONNEL ADMINISTRATION. The functions of personnel work in business and industry. The selection and placement of employees, their training, supervision and motivation; the scientific study of work and fatigue. An introduction to personnel techniques is included. Given in alternate years with 221.

(4) II (Miner)

113—PSYCHOLOGY OF LEARNING. An experimental study of the learning process with an analysis of types of learning. The

lectures are centered around the topics of the nervous mechanism in learning and the conditioned response. In the laboratory, the conditions which affect learning are studied. Examples of such conditions are: the effect of drugs; the relation of length, amount and complexity of the material, and of the mode of attack to learning. One hour lecture and four hours laboratory a week.

(3) III (White)

114—ABNORMAL PSYCHOLOGY. An intensive course on disturbed conduct and thinking are studied from both the theoretical and the practical points of view. The major psychoses and neuroses are given special consideration. Some opportunity for clinical observation is provided.

(4) III (Dimmick)

115—GENETIC PSYCHOLOGY. Influence of hereditary factors in the development of human behavior, with a critical survey of the problem and the evidence in connection with certain psychological traits such as musical and other special abilities, intelligence, insanity, and interests.

(4) II (Newbury)

116—COMPARATIVE PSYCHOLOGY. One hour of lecture, two hours of laboratory a week. A survey of the field of animal behavior with special reference to experimental technique. Opportunity for research experience in an animal laboratory. Topics include problems of heredity and environment, activity, instinct, motivation, learning, sensory discrimination, and personality in sub-human species. Relationships to human problems indicated.

(5) III (Newbury)

120a-d—INDEPENDENT WORK IN PSYCHOLOGY. Designed for advanced students and graduates who undertake minor research problems to be conducted in regular consultation with the instructor. A minimum of six hours per week is required.

(3) I, II, III, IV (Miner and others)

121—STUDENT PERSONNEL. The methods of dealing with student personnel problems in college and high school, including the problems of selection, classification, sectioning of classes, grading, personal adjustment, motivation, guidance and vocational placement. The functions of a personnel officer in schools and colleges.

(4) III (Miner)

122—PERSONALITY MALADJUSTMENTS. The course is intended primarily for social workers, teachers, and others, who deal with the common maladjustments which they are able to detect and help. The causes of such disturbances in the home, school or social surroundings will be emphasized. The early symptoms of more grave mental disorders will be treated from the standpoint of

mental hygiene. The students will be acquainted with the background of scientific studies which is necessary for the interpretation of problem children and maladjusted adults. Examples of representative cases will supply some training for practical application of the principles discussed.

(4) I (Dimmick)

123—PRACTICE IN TESTING. This course trains the student in the techniques of administering, scoring and interpreting the group and individual intelligence and achievement tests most frequently employed in educational and psychological guidance. Opportunity will also be provided for the diagnosis and evaluation of aptitudes and emotional characteristics as these are related to adjustment problems. The practical rather than the theoretical aspects of diagnostic procedures are emphasized.

*Prerequisite: Psychology 111
or its equivalent*

(5) II (Dimmick)

124—MENTAL HYGIENE. The objective of the course is to give a general orientation to the subject of mental hygiene, its historical development, its scope and relation to various sciences. The individual and cultural determinants of behavior will be discussed.

(4) I (Ratliff)

125—EXPERIMENTAL CHILD STUDY. An advanced course in the psychology of the normal child. The scientific background of experimental and observational method. Opportunities are provided to work with children in the University Nursery, Pre-school and Elementary School.

*Prerequisite: Psychology
of the Child.*

(4) II (Beaumont)

Courses Open Only to Graduate Students

201a—SEMINAR IN PSYCHOLOGY. One two-hour discussion each week of some current systematic concepts and research under way by graduate students and members of the staff.

(1) I (Miner and Staff)

201b, c, etc.—SEMINAR IN PSYCHOLOGY. Continuation of 201a. These numbers are provided for registration in succeeding semesters.

(1) I, II, III, IV (Miner and the Staff)

203a—PROBLEMS IN PSYCHOLOGY. Shorter research problems are registered under this number. A minimum of six hours per week is required in consultation with the instructor.

(3) I (Miner and others)

203b, c, etc.—PROBLEMS IN PSYCHOLOGY. Continuation of research. These numbers are provided for registration in subsequent semesters.

(3) I, II, III, IV (Miner and others)

210a—RESEARCH IN PSYCHOLOGY. Research or thesis work may be registered under this number. A minimum of nine hours per week is required on research conducted in consultation with the instructor.

(5) I (Miner and others)

210b, c, etc.—RESEARCH IN PSYCHOLOGY. Continuation of research. These numbers are provided for registration in succeeding semesters.

(5) I, II, III, IV (Miner and others)

211—MENTAL WORK AND FATIGUE. A laboratory course. Four hours devoted to experiments and one hour discussion each week. Prerequisites, an advanced course in experimental psychology and elementary statistics or their equivalent.

(4) I (White)

212—THE EMOTIONS. A laboratory course. Four hours devoted to experiments and one hour discussion each week. Prerequisites, an advanced course in experimental psychology and elementary statistics or their equivalent.

[NOT OFFERED 1942-43]

(5) II (White)

213—THE OBSERVATION PROCESS. A laboratory course. Four hours devoted to experiments and one hour discussion each week. Prerequisites, an advanced course in experimental psychology and elementary statistics or their equivalent.

(5) II (White)

215—PSYCHOMETRICS. An advanced course which considers the treatment and interpretation of human measurements. The course deals with the computation and interpretation of simple, partial and multiple correlations, regressions, equations, and reliability of measures.

Prerequisites: *Math. 24*
or its equivalent.

(5) III (Asher)

217—PSYCHOLOGY OF LANGUAGE. An experimental course dealing with both written and spoken language. The development and physical basis of language, together with its function in thought processes. The main emphasis will be placed on the experimental phases of the subject. Two hours lecture and two hours laboratory each week.

[NOT OFFERED 1942-43]

(4) III (White)

219—CLINICAL PSYCHOLOGY. Two hours clinic and two hours lecture. A survey of clinical work on the diagnosis and adjustment of problem children and adults. The course gives practical training and experience with representative cases.

(5) III (Dimmick)

220—HISTORY OF PSYCHOLOGY. An historical presentation of the origin and development of psychological thought in Ancient Greece, modern, rational, empirical and the beginning of experimental psychology with the discussion of the various approaches to science.

(3) I (Miner)

221—SYSTEMATIC PSYCHOLOGY. The evaluation of the fundamental concepts and current schools of psychology.

(3) II (Miner)

SOCIOLOGY

101—SOCIAL DEPENDENCE. A study of poverty and social dependence, and of measures for its relief and reduction, with special attention to present private and public activities in this direction, including social insurance.

(4) II (Best)

102—SOCIAL PATHOLOGY. A study of illness and accidents, mortality rates, mental and physical impairment or defectiveness, health insurance, and hospitals and similar institutions and agencies, all from a sociological point of view.

(4) III (Sanders)

103—CRIMINOLOGY. A study of general conditions as to crime and delinquency, of measures of punishment and reform of the offender, of criminal procedure and its possible reform, and of measures for the prevention of crime.

(4) I, III, IV (Best)

105—SOCIAL SYSTEMS. A study of social systems propounded or attempted in human society from Plato's Republic down to the present.

(4) II (Sanders)

107—COMMUNITY WELFARE WORK. A course involving an inspection of the several public welfare agencies and institutions of the community, and of certain ones of the State, after a preliminary theoretical consideration.

[OFFERED OCCASIONALLY]

(4)

109—THE FAMILY. A study of the family, both in its historical aspects and in connection with modern life.

(4) I, III, IV (Sanders)

110—CHILD WELFARE. A study of present social attitudes toward the child, and of methods and agencies for its care and protection.

(4) I (Sanders)

112—COMMUNITY ORGANIZATION. A study of the theory and practical results of organization among individuals and among different agencies in the community for the advancement of its life.

(4)

114a-d—INDEPENDENT WORK. Study of some special topic by duly authorized students.

(1) I, II, III, IV (Staff)

118—URBAN SOCIAL ECONOMY. A study of the problems of the city.

(4)

121—POPULATION MOVEMENTS. A study of movements and trends in population, with respect to race, age, birth-rates, etc.

(4) II (Sanders)

124—METHODS OF SOCIAL INVESTIGATION. A study of the several methods of investigation and research employed in the fields of sociology and social work. Two hours lecture; two hours laboratory. Open only to properly qualified students

(4) II (Sanders)

201a-b—SOCIOLOGY SEMINAR. Consideration mainly of methods of research and of current sociology literature.

(2) I, II (Best)

223—SOCIAL TREATMENT OF DELINQUENCY. An examination of possible and actual methods of dealing with the delinquent, including institutional care, juvenile court, probation, parole, etc. Open only to properly qualified students

[OFFERED OCCASIONALLY]

(4)

226—SOCIAL LEGISLATION. A study of the essential content of the law dealing with social welfare matters, together with the general principles involved in its enactment. Open only to properly qualified students.

[OFFERED OCCASIONALLY]

(4)

RURAL SOCIOLOGY (See Agriculture)

SOCIAL WORK (See Social Work)

III. BIOLOGICAL SCIENCES

AGRONOMY (See Agriculture)

ANATOMY AND PHYSIOLOGY

105—ARCHITECTURE OF THE HUMAN SKELETON. The course is designed for the student who wishes advanced study in Anatomy and Physiology, for students of Anthropology, for students in Art, and for those who are preparing for the study of medicine. The study begins with the development of the skeleton and joints. This is followed by the process of ossification and the histology of bones. Each bone of the body is studied in great detail, organized demonstrations are given with achitecture and function being stressed. Variations in the skeleton are also considered and whenever possible, the bone is compared with that of the lower vertebrates. The physiology of the bone, joint and muscular relations are studied in detail. Lecture and recitation, two hours a week; laboratory, six hours a week.

(5) I (Allen and Assistant)

106—INTRODUCTION TO ENDOCRINOLOGY. This is an introductory study of the glands of internal secretion or the endocrine glands in which the general development, anatomical location and structure, and fundamental functions of the organs are presented. The purpose of the course is to give a general knowledge in this particular field rather than a technical and detail knowledge. The course will be found to be of value not only to the student of Anatomy and Physiology and related subjects but also to those students of education and sociological interests. Lectures and discussions, four hours a week.

Prerequisites: A. & P. 1a and 1b (4) II (Allen and Driver)
or the equivalent; Zoology
7b; Chemistry 1a and 1b;
and with the consent of
the instructor.

107—ADVANCED ANATOMY. An introduction to the anatomy and physiology of the nervous system. The aim of the course is to provide an introductory laboratory course on form, structure, and functional arrangements of the nervous system for students of biology, physiology, psychology and those preparing for the study of medicine or the medical sciences. The work of the course includes a careful study of the nervous systems of vertebrates. The simpler types of nervous systems are compared with that of man. The devolpment of the various reflexes are considered. The relation of

the structure of the nervous system to psychological reactions are studied. Lectures and recitations, three hours a week; laboratory, four hours a week.

Prerequisites: A. & P. 1a and 1b;

(5) III (Allen)

Zoology 101 and Zoology 106

108a—ADVANCED PHYSIOLOGY. The course, as a whole, is designed for students who anticipate further advanced study in physiology or in the medical sciences. In this part of the course the nervous system which includes the structures and functions of the spinal cord, the medulla oblongata, the cerebellum, the cerebrum and the autonomic system are taken up in great detail. This is followed with an intensive study of the special sense-organs. Lectures, recitations, two hours a week; laboratory 4 hours a week.

Prerequisites: A. & P. 1a and 1b

(4) I (Allen and Driver)

or the equivalent; Chemistry 1a and 1b; Physics 1a and 1b; also, the consent of the instructors.

108b—ADVANCED PHYSIOLOGY. This division of the course will open with the consideration of muscle-physiology and will include both skeletal and smooth muscle tissue. Experiments are performed to demonstrate that muscle is a thermogenic and an electrogenic organ. In addition to the muscle studies, the circulatory and respiratory systems will be thoroughly surveyed. Lectures and recitations, two hours a week; laboratory, four hours a week.

Prerequisites: A. & P. 108a

(4) II (Allen and Driver)

108c—ADVANCED PHYSIOLOGY. The subject matter will include the following: The gastro-intestinal tract with its secretory organs; the processes of digestion, absorption, excretion and heat production; voice and the mechanics of speech. Lectures and recitations, two hours a week; laboratory, four hours a week.

Prerequisites: A. & P. 108b

(4) III (Allen and Driver)

109—APPLICATION OF PHYSICAL PRINCIPLES TO THE HUMAN BODY. This course is especially designed for students interested in Anatomy and Physiology or the natural sciences. Students of the physical sciences as well as others will also find the course to be of practical and cultural value. The course is opened by thoroughly acquainting the student with the various physical phenomena that are to be considered. This will be followed by applying the same to the physiological processes of the body. Such will include stress and strain with respect to the bones of the skeleton, types of levers involved in joint action, permeability, calorimetry, mechanics of circulation and temperature regulation, mechanics of vision,

mechanics of hearing, mechanics of speech or voice. Lectures and recitations, three hours a week; laboratory, two hour a week.

Prerequisites: A. & P. 1a and 1b (4) II (Driver and Assistant) or the equivalent; physics 1a and 1b; Chemistry 1a and 1b.

116c—SEMINAR IN ANATOMY AND PHYSIOLOGY. All students who are majoring in the Department are required to take this course. At each meeting of the Seminar, an assigned scientific article of physiological or anatomical subject matter will be reviewed thoroughly by a member of the seminar and then discussed in general. In addition to the foregoing, each member of the seminar will be required to follow closely the current publications bearing upon the subjects of the class and present brief reports of such articles which are of interest. One two-hour discussion period a week.

Prerequisites: A. & P. 1a and 1b (1) I, II, III, IV (Staff) or the equivalent.

116d—SEMINAR IN ANATOMY AND PHYSIOLOGY. Continuation of 116c. One two-hour discussion period a week.

Prerequisites: A. & P. 1a and 1b (1) I, II, III, IV (Staff) or the equivalent.

201a—RESEARCH IN PHYSIOLOGY. The pursuit of an assigned problem in which the student will have the opportunity to demonstrate originality. Conference and laboratory, twelve hours a week.

Prerequisites: A. & P. 1a and 1b (6) I (Allen and Driver) or the equivalent; Chemistry 127a and 127b (131a and 131b desirable); Physics, one year.

201b—RESEARCH IN PHYSIOLOGY. Continuation of 201a. Conferences and laboratory, twelve hours a week.

Prerequisites: A. & P. 1a and 1b (6) II (Allen and Driver) or the equivalent; Chemistry 127a and 127b (131a and 131b desirable); Physics, one year.

201c—RESEARCH IN PHYSIOLOGY. Continuation of 201b. Conferences and laboratory, twelve hours a week.

Prerequisites: Same as 201a (6) III (Allen and Driver) and 201b.

ANIMAL INDUSTRY (See Agriculture.)

ANIMAL PATHOLOGY (See Agriculture.)

ANTHROPOLOGY AND ARCHAEOLOGY

102—KENTUCKY ARCHAEOLOGY. A rapid survey of the more important prehistoric cultures found in North America and the sequence of cultures found in Kentucky to the time of the white settlers. Three hours per week.

(2) IV (Haag)

105—ETHNOLOGY OF ASIA AND AFRICA. A study of the present races of mankind. The origins, migrations and present distribution of these races and their subdivisions. Three recitations per week.

(2) I (Funkhouser)

106—ETHNOLOGY OF EUROPE. A study of the origins and migrations of the ethnological groups of Europe. Three recitations per week.

Prerequisite: Ethnology 105.

(2) II (Funkhouser)

107—ETHNOLOGY OF THE NEW WORLD. A study of the origins and migrations of the ethnological groups of the new world. Three recitations per week.

(2) III (Funkhouser)

110a, b, c, d—FIELD ARCHAEOLOGY. Field work in archaeology including the actual excavation of prehistoric sites, the surveying, photographing and measuring involved and the preparation of technical reports.

(3) (Funkhouser, Webb and Haag)

125—PHYSICAL ANTHROPOLOGY. Detailed study of the origin and development of the races of man with emphasis on somatic and skeletal difference, measuring techniques, growth, race mixture and hereditary effects, development of human dentition, and osteopathology as observed in prehistoric man.

(3) II (Snow)

150a-d—SEMINAR. Presentation and discussion of current literature and recent research in Anthropology and reports on work in progress in the department. Required of all majors.

(1) I, II, III, IV (Staff)

BACTERIOLOGY

102—GENERAL BACTERIOLOGY. Observation and cultivation of bacteria and related microorganisms; study of their morphology, classification, physiology, relation to certain fermentations, to food, to soil fertility and to disease. Lectures and recitations, three hours; laboratory, six hours a week.

Prerequisites: Chemistry 1b.

(6) I, II, III, IV (Scherago, Wright and others)

103—PATHOGENIC BACTERIOLOGY. A study of human and animal pathogenic microorganisms, especially their morphological, cultural and pathogenic properties. Lectures and recitations, three hours; laboratory, six hours a week.

Prerequisites: Bacteriology (6) I, IV (Scherago and Knott)
102 or 52; or 2b and
Chemistry 1b.

104—APPLIED BACTERIOLOGY. A course in bacteriological analysis to supplement Courses 52 and 102. Laboratory six hours a week.

Prerequisites: Bacteriology 102 or 52; (3) I, II, III, IV
or 2b and *Chemistry* 1b. (Weaver and Knott)

110a—LABORATORY DIAGNOSIS. Laboratory methods employed in diagnostic and public health laboratories. Designed primarily for medical technology students. Examination of sputum and urine. Laboratory, six hours a week.

Prerequisite: Preceded or accompanied (3) I, IV
by *Bacteriology* 103. (Wright and Knott)

110b—LABORATORY DIAGNOSIS. Continuation of 110a. Examination of stomach and intestinal contents and blood. Laboratory, six hours a week.

Prerequisite: Same as for 110a. (3) II, IV
(Wright and Knott)

110c—LABORATORY DIAGNOSIS. Continuation of 110b. Laboratory diagnosis of parasitism; laboratory methods used in diagnosis of gonorrhoea, typhoid fever, diphtheria, syphilis, etc. Laboratory, six hours a week.

Prerequisite: Preceded or accompanied by (3) III, IV
Bacteriology 125b. (Wright and Knott)

111—GENERAL PATHOLOGY. The effects of disease on the organs and tissues of the human body will be studied at autopsies and by the examination of fresh and museum specimens as well as histological sections. Degenerations, infiltrations, regenerations, inflammations, disturbances of the circulation, infectious granulomata, neoplasms, etc., will be studied. Lectures and recitations, three hours; laboratory six hours a week.

Prerequisites: Anatomy and Physiology 1a-b;
Zoology 7c, 101b, and 106; *Bacteriology* 103 (6) III (Maxwell,
and consent of head of department. Scherago, Knott)

115a-f—INDEPENDENT WORK. Students will be assigned special problems in laboratory work and reference reading. Laboratory, eight hours a week.

Prerequisite: Any Bacteriology course (4) I, II, III, IV
above 102. (Scherago, Weaver, Wright)

120a—HOSPITAL LABORATORY PRACTICE. Students will be required to carry out, under supervision, the laboratory work in one of the hospitals in Lexington. Laboratory, eighteen hours a week.

Prerequisites: Bacteriology 110a and b; (6) I, II, III
Consent of head of department. (Maxwell, Harrison, Stein)

120b—HOSPITAL LABORATORY PRACTICE. Continuation of 120a. Laboratory twelve hours a week.

Prerequisites: same as for 120a. (4) I, II, III
 (Maxwell, Harrison, Stein)

120c—HOSPITAL LABORATORY PRACTICE. Continuation of 120a. Laboratory fifteen hours a week.

Prerequisites: Same as for 120a. (5) I, II, III
 (Maxwell, Harrison, Stein)

125a—IMMUNOLOGY AND SEROLOGY. The theories and mechanism of infection and immunity; the preparation, standardization and uses of vaccines, toxins, antibodies and other biological products related to the diagnosis, prevention and treatment of specific infectious diseases; agglutination; complement fixation, etc. Lectures and recitations, two hours a week; laboratory, six hours a week.

Prerequisite: Bacteriology 103. (5) I, IV (Scherago and Wright)

125b—IMMUNOLOGY AND SEROLOGY. Continuation of 125a. Receptor analysis; serology of syphilis; hypersensitiveness. Lectures, one hour a week; laboratory, four hours a week.

Prerequisite: Bacteriology 125a. (3) III, IV (Scherago and Wright)

The following courses open to Graduate students only.

203a—PUBLIC HEALTH BACTERIOLOGY. This course considers the public health aspects of bacteriology including the etiology, epidemiology, immunology, and laboratory diagnosis of infectious diseases; the bacteriology of air, water and sewage; food poisoning; the production, standardization and practical applications of biological products used in the diagnosis, treatment, and prevention of infectious diseases; the standardization of disinfectants. Lectures and recitations, two hours; laboratory, six hours.

Prerequisites: Open only to Physicians and Health Officers or those with equivalent training. (5) II, IV
 (Scherago and others)

203b—PUBLIC HEALTH BACTERIOLOGY. Continuation of Course 203a. Lectures and recitation, two hours; laboratory, six hours a week.

Prerequisite: Bacteriology 203a. (5) III, IV (Scherago and others)

206a—BACTERIOLOGY OF FOODS. Relation of Microorganisms to food production and handling; food preservation. Microbiology of fermentation products, canned foods, eggs, tomato products, meat and meat products, fish and shellfish, etc. Standard methods of bacterial analysis as used in official food and public health laboratories. Food poisoning. Lectures and recitations, two hours; laboratory, four hours a week.

Prerequisites: Bacteriology 2b or 52; Chemistry 8b. (4) I, IV (Weaver and others)

206b—BACTERIOLOGY OF FOODS. Microbiology of milk and milk products. Standard methods of bacterial analysis as used in official food and public health laboratories. Lectures and recitations, two hours; laboratory, four hours a week.

Prerequisites: Bacteriology 2b or 52; Chemistry 8b. (4) II, IV (Weaver and others)

207—BACTERIOLOGY OF WATER AND SEWAGE. The microflora of water; importance of the colon-typhoid group of bacteria in water; methods of water analysis and interpretation of results; special media used in isolating and identifying the colon-typhoid group of bacteria; methods of water purification; microflora of sewage; methods of sewage analysis; methods of sewage disposal; bacteriological study of swimming pools, methods of analysis; effect of treatment on bacteriological content, regulations concerning swimming pools. Water purification plants, sewage disposal plants and swimming pools will be visited and studied. Lectures and recitations two hours a week; laboratory, four hours a week.

Prerequisites: Bacteriology 2b or 52 or 102; Chemistry 8b (4) III, IV (Weaver and others)

250a-f—SEMINAR. Review of current literature in bacteriology; presentation of papers on work in progress in the department or on assigned topics; reports on meeting of national bacteriological societies. Required of all graduate students. Two hours a week.

(1) I, II, III (Staff)

BOTANY

103a-b—PLANT PHYSIOLOGY. A course dealing with the fundamental functions of the plant cell life, nature of protoplasmic membranes, osmotic phenomena, metabolism, growth and responses of various kinds. Lecture one hour; recitation, one hour; laboratory four hours.

Prerequisites: Botany 1a, 1b (4) II, III (McInteer)

106a—SPECIAL PROBLEM. The qualified student will be assigned some problems for solution.

(5) I, II, III (McFarland, McInteer)

106b—SPECIAL PROBLEM. A continuation of 106a.

(5) I, II, III (McFarland, McInteer)

111—CLASSIFICATION OF PARASITIC FUNGI. Entire time will be taken up in studying the fungi that cause diseases of plants, both cultivated and wild.

Prerequisites: Botany 125a, b

(3) II (McFarland)

114—ECOLOGY. A course dealing with plants in relation to their habitats. Studies will be made along the lines of plant groups and quadrat formation. The influence of various soils and environment on plants and their growth. Lecture, two hours; laboratory, two hours.

Prerequisites: Botany 1a, 1b, 15.

(5) III (McInteer)

115 a, b, c—SEMINAR.

(1) I, II, III (Staff)

125a—MORPHOLOGY OF FUNGI. A detailed study of the different types of fungi from the standpoint of morphology, cytology and physiology.

(4) I (McFarland)

125b—MORPHOLOGY OF FUNGI. A continuation of 125a.

(4) II (McFarland)

125c—MORPHOLOGY OF FUNGI.

(4) III (McFarland)

126a—MYCOLOGY. A course which employs the entire time of the student in identification of unknown

(5) I (McFarland)

125b—MYCOLOGY. A continuation of 126a.

(5) II (McFarland)

150a—ADVANCED SYSTEMATIC BOTANY. A continuation of Course 15, but more work and more difficult plants are studied.

(5) I (Rogers)

150b—ADVANCED SYSTEMATIC BOTANY. A continuation of 150a.

(5) II (Rogers)

206a—RESEARCH IN MORPHOLOGY.

(5) II (McFarland)

206b—RESEARCH IN MORPHOLOGY. A continuation of 206a.

(5) III (McFarland)

207a—RESEARCH IN MYCOLOGY.

(5) I (McFarland)

207b—RESEARCH IN MYCOLOGY. A continuation of 207a.
(5) II (McFarland)

210a—RESEARCH IN PLANT PHYSIOLOGY.
(5) (McInteer)

210b—RESEARCH IN PLANT PHYSIOLOGY. A continuation
of 210a.

(5) (McInteer)

213a—RESEARCH IN SYSTEMATIC BOTANY.
(5) I (McFarland)

213b—RESEARCH IN SYSTEMATIC BOTANY. A continu-
ation of 213a.

(5) II (McFarland)

213c—RESEARCH IN SYSTEMATIC BOTANY.
(5) III (McFarland)

ENTOMOLOGY (See Agriculture)

HORTICULTURE (See Agriculture)

HYGIENE AND PUBLIC HEALTH

The Department of Hygiene and Public Health offers graduate work leading to the degree of Master of Arts or Master of Science. The requirements for these degrees are the same as required in all other departments.

The courses offered by the department which are accepted for graduate credit are as follows:

100a—PUBLIC HEALTH. A consideration of the cause, prevalence, transmission and control of preventable diseases.
(4) I, III, IV (Chambers and Heinz)

100b—PUBLIC HEALTH. A continuation of 100a. Environmental and organization approach to disease prevention.
(4) II, IV (Chambers and Heinz)

104—MATERNAL AND CHILD HEALTH. Problems in maternal and child health from the standpoint of the public health nurse.

(3) II, III (Griffin)

110—HEALTH EDUCATION AND HEALTH SUPERVISION OF SCHOOLS. A course dealing with principles of health education, and the cooperative nature of school health work through study of problems in the solution of which contributions are made by parents, school and community.

(4) II, IV (Heinz)

111a, b—INDEPENDENT WORK IN HYGIENE AND PUBLIC HEALTH.

(4) I, II, III, IV (Staff)

115—COMMUNICABLE DISEASES. A study of communicable diseases with reference to causal agents, transmission, and their methods of prevention and control.

(4) IV (Hamilton)

120a—MENTAL HYGIENE. An introduction to mental hygiene, including a consideration of the cause, treatment and prevention of mental disorders.

(4) I, III (Ratliff)

120b—MENTAL HYGIENE OBSERVATION. A continuation of Hygiene 120a. Students are given the opportunity to apply to concrete cases the principles and concepts developed in 120a.

Prerequisites: Psy. 124 or Hyg. 120a. (4) II (Ratliff)

122—SCHOOL AND COMMUNITY HEALTH. An appreciation of the cooperative nature of school health work through a study of problems in the solution of which contributions are made by home, school, community and organized health departments.

(3) I, III (Heinz)

125a—COUNTY HEALTH PRACTICE FOR NURSES. Lectures and recitations on the purposes, development, practice and techniques of local health work.

(3) I, II, III, IV (Cawood)

125b-e—COUNTY HEALTH PRACTICE FOR NURSES. Nursing practice in the training area under the supervision of trained personnel. Sixteen weeks taken either concurrently or following the formal courses of instruction.

(4) I, II, III, IV (Cawood)

225a—COUNTY HEALTH PRACTICE FOR HEALTH OFFICERS. An internship in actual county health practice.

(4) I, II, III, IV (Cawood)

225b—COUNTY HEALTH PRACTICE FOR HEALTH OFFICERS. A critical analysis of one service of the Fayette County Health Department.

(3) I, II, III, IV (Cawood)

PSYCHOLOGY (See Social Sciences.)

ZOOLOGY

101a—HISTOLOGY. Histology of the tissues. Lectures and laboratory work on the preparation of material for microscopic study.

The latter part of the course is designed to acquaint the student with microscopic manipulation and at the same time familiarize him with the tissues of the animal body.

Prerequisites: Zoology 1a, b, c (4) I, IV (Brauer)

101b—HISTOLOGY. Histology of the organs. A continuation of Course 101a. Lectures and laboratory work on the microscopic anatomy of the animal body.

Prerequisites: Zoology 1a, b, c (4) II, IV (Brauer)

102—ORNITHOLOGY. A study of the life histories, anatomy and physiology and taxonomy of birds with particular reference to the habits, songs, eggs, nests, migration and economic importance of our native birds.

(4) III, IV (Funkhouser, Allen)

105—PARASITOLOGY. A study of the general principles of parasitism, taxonomy, morphology, life cycles, and physiology as illustrated by the protozoan, helminth, and arthropod groups. The laboratory work consists of host examination, preparation for study, and demonstrations.

Prerequisites: Zoology 1a, b, c; 101a. (5) I (Lincicome)

106—EMBRYOLOGY. Vertebrate development. Lectures on maturation, fertilization, cleavage, axiation, organogenesis, and anomalies of development. The laboratory work consists of a study of the germ cells, maturation, cleavage and development of the chick and of the pig.

Prerequisites: Zoology 1a, b, c; 101a (5) III, IV (Brauer)

108a—PRINCIPLES OF ZOOLOGY. An advanced lecture course open only to juniors, seniors and graduate students on the fundamental principles of biology. The first semester is devoted primarily to the study of organic evolution.

(3) I, IV (Funkhouser)

108b—PRINCIPLES OF ZOOLOGY. A continuation of 108a. The second quarter is devoted to the study of heredity and eugenics.

(3) II, IV (Funkhouser)

109—ANIMAL ECOLOGY AND FIELD BIOLOGY. Habits, life histories, food, respiration and other adaptations of animals to the environments in which they live. Study of representative habitats, communities, etc.

Prerequisites: Zoology 1a, b, c or equivalent.

(4) I (Allen)

[GIVEN 1942-43 AND ALTERNATE YEARS]

110a-f—INDEPENDENT WORK. Special problems for individual students who are capable of pursuing independent investigations.

(4) I, II, III (Staff)

112—ICHTHYOLOGY. (1) Taxonomy of the fishes. Use of keys and literature. Drawing types of families. (2) Life histories and biology of many type species, illustrated by photographs. (3) Fish structure and physiology. (4) Fish culture and economic ichthyology; care of fishes, aquaria, etc. (5) Special studies, such as blind fishes, deep sea fishes, etc.

Prerequisites: Zoology 1a, b, c.

(4) II (Allen)

[GIVEN 1942-43 AND ALTERNATE YEARS]

114a-d—ZOOLOGICAL SEMINAR. (1) Occasional presentation of the result of research by members. (2) Reports on papers of technical or semi-technical nature in the current literature. (3) Occasional book reviews. (4) Discussion of biological principles and phenomena. (5) Correlation of zoological fields.

(1) I, II, III (Staff)

115a—ADVANCED PARASITOLOGY (Protozoology). The etiology, pathology, epidemiology, diagnosis, prophylaxis and control of protozoan diseases of man. Practical studies in diagnosis.

Prerequisite: Zoology 1a, b, c; 105

(4) II (Lincicome)

[GIVEN 1942-43 AND EVERY THIRD YEAR]

115b—ADVANCED PARASITOLOGY (Helminthology). The etiology, pathology, epidemiology, diagnosis, prophylaxis, and control of cestode, trematode, and roundworm diseases of man. The analysis of life cycles and the diagnosis of helminth parasites of man. Three lectures, two laboratory periods.

Prerequisites as in preceding.

(4) II (Lincicome)

[GIVEN 1943-44 AND EVERY THIRD YEAR]

115c—ADVANCED PARASITOLOGY (Medical Entomology). A study of Arthropods important in the causation and transmission of disease. Structure, life histories, methods of recognition and control. Collection, identification, and experimental approach to life cycles.

Prerequisites as in 115a.

(4) II (Lincicome)

[GIVEN 1944-45 AND EVERY THIRD YEAR]

157a—INVERTEBRATE ANATOMY. Lower Invertebrates. (1) Systematic consideration of lower phyla, classes, orders and a few families. (2) Dissection of a few types not previously studied. (3) Identification and drawings of external aspects of many genera. (4) Life histories.

Prerequisites: Zoology 1a, b, c.

(3) I (Allen and Lincicome)

157b—INVERTEBRATE ANATOMY. The higher phyla. Continuation of 157a.

Prerequisites: Zoology 1a, b, c.

(3) II (Allen and Lincicome)

157c—VERTEBRATE ANATOMY. (1) Systematic consideration of classes, orders, and some families of Vertebrata. (2) Detailed dissection of types not previously studied. (3) Comparative organology and (briefly) physiology of the several classes. (4) Preparation of charts and diagrams of nervous systems, urinogential systems, and vascular systems. (5) Complete demonstration of the Mammalian anatomy.

(6) III (Allen)

160—ONTOGENY. Theories and philosophies of development with a consideration of experimental data bearing thereon. Lectures and literature reports.

(3) II (Brauer)

210a, b, c—ZOOLOGICAL PROBLEMS (Research).

Prerequisites: Courses required as undergraduate major, or their equivalent.

(4) I, II, III (Staff)

IV. PHYSICAL SCIENCES

CHEMISTRY

Requirements for the degree of Master of Science: Thirty-six quarter hours in graduate courses exclusive of the thesis, one academic year (36 weeks) in residence, and an acceptable thesis.

The applicant must have a good reading knowledge of scientific German. Ability to read scientific French is often required of the candidaté.

101a—PHYSICAL CHEMISTRY. For students in Agriculture and the biological sciences.

Prerequisites: Chemistry 7 and 8b,

Physics 1c, Mathematics 17.

(4) I (Bedford)

101b—PHYSICAL CHEMISTRY. A continuation of Chemistry 101a.

Prerequisite: 101a.

(4) II (Bedford)

103a—QUALITATIVE ORGANIC ANALYSIS. A systematic study of the separation and identification of organic compounds. Lecture one hour, laboratory six hours.

Prerequisite: Chemistry 127c.

(4) I, III (Astle)

103b—QUALITATIVE ORGANIC ANALYSIS. Laboratory six hours.

Prerequisite: 103a.

(3) II (Astle)

104—SYNTHETIC INORGANIC CHEMISTRY. An intermediate course planned to aid the student in gaining a more adequate knowledge of practical inorganic chemistry.

Prerequisite: Chemistry 150.

(5) II (Maxson)

106a—SYNTHETIC ORGANIC CHEMISTRY. A laboratory course which includes the preparation of compounds of theoretical, biological and industrial importance together with references to the original literature, conferences and reports.

Prerequisite: Chemistry 127c.

(4) I, II, III (Barkenbus)

106b—SYNTHETIC ORGANIC CHEMISTRY. A continuation of 106a.

Prerequisite: Chemistry 106a.

(3) I, II, III (Barkenbus)

107a—SELECTED PROBLEMS IN QUANTITATIVE ANALYSIS.

Prerequisite: Chemistry 109.

(4) I, II, III (Stewart)

107b—SELECTED PROBLEMS IN QUANTITATIVE ANALYSIS.

Prerequisite: 107a.

(3) I, II, III (Stewart)

109—QUANTITATIVE ANALYSIS. A lecture and laboratory course devoted to the analysis of ores, alloys, etc.
Prerequisite: Chemistry 8c. (5) I, II, III (Stewart)

110—PHYSICAL CHEMISTRY. Intermediate course.
Prerequisite: Chemistry 131c. (4) I (Bedford)

111—PHYSICAL CHEMISTRY. Intermediate course.
Prerequisite or concurrent: Chemistry 110. (3) I, II (Bedford)

114—ADVANCED QUANTITATIVE ANALYSIS. The analysis of iron and steel, slags and rocks.
Prerequisite: Chemistry 109. (5) I, II, III (Stewart)

119a—INDUSTRIAL CHEMISTRY. A survey course on modern industrial chemistry using the chemical literature and a text as a basis for discussion.
Prerequisite: Chemistry 131c. (3) I (Maxson)

119b—INDUSTRIAL CHEMISTRY. A continuation of 119a.
Prerequisite: Chemistry 131c. (4) II

122—CHEMICAL LITERATURE. Conferences and reports on chemical literature and training in the use of literature for research purposes.
Prerequisite: Chemistry 131c. (2) I (Maxson)

127a—ORGANIC CHEMISTRY. Recitations and lectures in the aliphatic series together with laboratory work on the preparation and study of such compounds as will emphasize basic principles and important synthetic methods.
Prerequisite: Chemistry 1b or 2b. (5) I (Barkenbus, Astle)

127b—ORGANIC CHEMISTRY. A continuation of Chemistry 127a.
Prerequisite: Chemistry 127a. (5) II (Barkenbus, Astle)

127c—ORGANIC CHEMISTRY. A continuation of Chemistry 127b. Cyclic series.
Prerequisite: Chemistry 127b. (5) III (Barkenbus, Astle)

130a—PHYSIOLOGICAL CHEMISTRY. The chemistry metabolism of carbohydrates, proteins, and fats. A study of the tissues, the secretions and excretions. The nature and action of enzymes. Nutrition, food values and requirements. The effect of a diet of selected food principles on the quantity of metabolic products.
Prerequisite: Chemistry 8b, 127c. (5) I (Barkenbus)

130b—PHYSIOLOGICAL CHEMISTRY. A continuation of 130a.
Prerequisite: Chemistry 130a. (5) II (Barkenbus)

130c—PHYSIOLOGICAL CHEMISTRY. A continuation of 130b.

Prerequisite: Chemistry 130b. (5) III (Barkenbus)

131a—PHYSICAL CHEMISTRY. Lectures and recitations covering the gaseous, liquid, and solid states of matter; phase rule; theories of solutions. Laboratory studies in physical chemical measurements.

Prerequisites: Chemistry 8c, Mathematics 20b, Physics 3a or concurrent. (5) I (Bedford)

131b—PHYSICAL CHEMISTRY. A continuation of 131a. Homogeneous and Heterogeneous Equilibria; Chemical Kinetics; Structure of Matter; Periodic Law; Radio-Chemistry; Colloids; Electro-Chemistry.

Prerequisite: Chemistry 131a. (5) II (Bedford)

131c—PHYSICAL CHEMISTRY. A continuation of 131b.

Prerequisite: 131b. (5) III (Bedford)

150—ADVANCED INORGANIC CHEMISTRY. A survey course covering the less common side of inorganic chemistry including laboratory work in synthesis.

Prerequisite: Chemistry 131c, or 101b. (5) III (Maxson)

201—SYNTHETIC INORGANIC CHEMISTRY. Practice and research in inorganic synthesis, with use of original literature.

(6) I, II, III (Maxson)

202a—QUANTITATIVE ANALYSIS. A critical study of known procedures and research in analytical chemistry.

(4) I, II, III (Stewart)

202b—QUANTITATIVE ANALYSIS. A continuation of Chemistry 202a.

Prerequisite: Chemistry 202a. (4) I, II, III (Stewart)

204a—ORGANIC CHEMISTRY.

Prerequisites: Chemistry 106b or 103b.

(4) I, II, III (Barkenbus)

204b—ORGANIC CHEMISTRY.

Prerequisite: Chemistry 204a.

(4) I, II, III (Barkenbus)

204c—ORGANIC CHEMISTRY. A continuation of 204b.

Prerequisite: Chemistry 204b.

(4) I, II, III (Barkenbus)

204d—ORGANIC CHEMISTRY.

Prerequisite: Chemistry 204c.

(4) I, II, III (Barkenbus)

205a—PHYSICAL CHEMISTRY. Lectures on selected topics.

Prerequisite: Chemistry 110. (3) I (Bedford)

205b—PHYSICAL CHEMISTRY. (Continuation of 205a.) Lectures on selected topics.

Prerequisite: Chemistry 205a. (3) II (Bedford)

206a—PHYSICAL CHEMISTRY. Laboratory course on selected topics in Advanced Physical or Electro-Chemistry.

Prerequisite or concurrent:
Chemistry 205a. (4) I, II, III (Bedford)

206b—PHYSICAL CHEMISTRY. A continuation of Chemistry 206a.

Prerequisite: Chemistry 205b. (4) I, II, III (Bedford)

210a-f—GRADUATE SEMINAR. Reports and discussions on recent research and current literature. Required of all graduate students.

(1) I, II, III (Staff)

ENGINEERING (See Engineering.)

GEOLOGY

101a—PALEONTOLOGY. A systematic study of the important phyla of fossil invertebrates, their classification, identification, and geological distribution.

Prerequisites: Geology 30a, b, c;
General Zoology. (4) I (McFarlan)

101b—PALEONTOLOGY. The stratigraphic use of fossils in the determination of the geologic age of strata. Collections are assigned, the fossils identified, and the age of the fauna determined.

Prerequisite: Geology 101a. (4) II (McFarlan)

105a, b, c, etc.—INDEPENDENT WORK IN GEOLOGY. May be elected in any field. Registration only after consultation with instructor in charge. (4)

106a—ECONOMIC GEOLOGY. Non-metallic mineral deposits (excepting petroleum, natural gas and asphalt). A study of origin, mode of occurrence, distribution and uses.

Prerequisite: Geology 30a, b, c; 123a, b. (4) (Branson)

106b—ECONOMIC GEOLOGY. Metallic mineral deposits. (4) (Nelson)

107a, b, c, etc.—ADVANCED FIELD GEOLOGY. The preparation of a geologic map, structure, and stratigraphic sections of assigned areas.

Prerequisites: Geology 30a, b, c; 31 (3) McFarlan)

118a, b, c—FIELD WORK IN REGIONAL GEOLOGY. Three weeks in the field in selected areas. These are varied from year to

year to permit extended work of this type. They have included the Southern Appalachians (1935), Niagara Falls and Sudbury, Ontario (1936), the Arbuckle and Ouachita Mountains, and eastern Oklahoma and Texas (1937), the Black Hills, South Dakota (1938), New York, New England, and Quebec (1939), Colorado and Wyoming (1940). The course is offered as a part of the summer quarter, coming early in June before the opening of the term. Required of major students at the end of their junior year.

Prerequisite: Geology 30a, b, c; 31 (3) (McFarlan and Young)

120a—GEOLOGY OF KENTUCKY. A study of the geological features of the state other than mineral resources. This includes the major events in its geological history, the development of regional characters, and an explanation of its scenic and natural wonders.

(4) (McFarlan)

120b—GEOLOGY OF KENTUCKY. The mineral resources of the state, their recognition, distribution, origin and uses. The fossil record of ancient life.

(4) (McFarlan)

121—ECONOMIC GEOLOGY OF KENTUCKY. A technical study of the mineral resources of the state, their distribution and availability, geological occurrence, origin, and geological factors determining probable extension of known deposits and the finding of others.

Prerequisites: Geology 101a, b;

106a, b; 107a, b, c; 122; 123a, b. (4) (McFarlan and others)

122—PETROLEUM GEOLOGY. A study of the origin and accumulation of petroleum. The course includes a consideration of the stratigraphy and structure of producing regions of the United States and a study of geologic methods used in exploratory work and in the extension and development of known fields.

Prerequisites: Geology 10a, b; 30a, b, c; 31;

Physics 1a, b.

(4) II (Branson)

123a—MINERALOGY. Crystallography and physical mineralogy with emphasis on their use in mineral identification.

Prerequisite: Chemistry 1a-b.

(4) I (Nelson)

123b—MINERALOGY. Chemical, descriptive and determinative mineralogy. The origin, occurrence, associations and alteration products of minerals.

(4) II (Nelson)

124a-b-c—REGIONAL GEOLOGY. A study of the geologic regions of the United States. The course will serve as tutorial work in preparation for the comprehensive examination.

(3) (All members of staff)

125—METHODS OF SUBSURFACE CORRELATION. Methods of and practice in petroleum geology
Prerequisite: Geology 122, 123a, b. (4) (L. B. Freeman)

208—STRUCTURAL GEOLOGY. A study of the structural features of the earth's crust with an analysis of the mechanics involved in the production of such structures. (Three lectures and recitations or 2 lectures and 2 hours of laboratory. Will vary at different times.)
Prerequisites: Physics 1a, b;
Geology 30a, b, c; 31 and 124a, b, c. (4) (Nelson)

210a—STRATIGRAPHIC PALEONTOLOGY. A study of the more important index fossils and fossil associations used in stratigraphic work. Paleozoic.
Prerequisites: Geology 101a, b. (4) (McFarlan)

210b—STRATIGRAPHIC PALEONTOLOGY. Mesozoic and Cenozoic.
 (4) (Young)

212a—PETROLOGY: OPTICAL MINERALOGY. A study of the optical properties of minerals in thin sections by means of the petrographic microscope. An introduction to the classification of the igneous rocks. One lecture and four hours of laboratory per week.
Prerequisites: Geology 123a, b; Physics 1a, b. (4) (Nelson)

212b—SEDIMENTARY PETROLOGY. A study of sedimentary rocks based on microscopical analysis. One lecture and four hours of laboratory per week.
Prerequisite: Geology 212a. (4) (Nelson)

MATHEMATICS AND ASTRONOMY

Graduate students will be able to obtain sufficient work to qualify for the doctor's degree. Eighteen quarter hours beyond calculus are required before counting work toward an advanced degree.

102. VECTOR ANALYSIS. An elementary course in the algebra and calculus of vectors with numerous applications in geometry and physics.
Prerequisite: Course 20b. (4) I (John)
 [GIVEN 1941-42]

103—THEORY OF EQUATIONS. This course is based on Dickson's First Course in the Theory of Equations, which is used as a text.
Prerequisite: Course 20a. (4) II (Pence)
 [GIVEN 1941-42]

105a—DIFFERENTIAL EQUATIONS. A first course in differential equations based on A. Cohen's text.

Prerequisite: Course 20b. (4) III (Downing)
[OFFERED 1942-43]

105b—DIFFERENTIAL EQUATIONS. Continuation of 105a. Partial differential equations. Applications.

Prerequisite: Course 105a. (4) I (John)
[OFFERED 1942-43]

106a—ADVANCED CALCULUS. Topics included: Continuity of functions; derivatives and differentials; Taylor's series; power series; partial differentiation; total derivatives; implicit functions; Jacobians; applications to geometry—elements of arc, area, and surface; maxima and minima; curvature and torsion

Prerequisite: Course 20b. (4) I (Cohen)
[GIVEN 1941-42]

106b—ADVANCED CALCULUS. Continuation of Mathematics 106a. Topics included: Definite integrals—existence, properties, differentiation of a definite integral, integration under the integral sign, improper integrals; Gamma and Beta functions; Dirichlet integrals; line, surface, and space integrals; elliptic integrals.

Prerequisite: Course 106a or
consent of instructor. (4) II (Cohen)
[GIVEN 1941-42]

110a-f—INDEPENDENT WORK IN MATHEMATICS. Limited to upper division and graduate students of high standing.

Prerequisite: Course 20b. (4) I, II, III, IV (Senior Staff)
[OFFERED 1942-43]

112—SERIES. Important theorems on limits, properties of infinite series, uniform convergence, multiplication of series.

Prerequisite: Course 20b. (4) I (Cohen)
[OFFERED 1942-43]

116—ANALYTIC MECHANICS. Composition and resolution of forces; statics of a particle; moments; couples; center of gravity; friction; simple harmonic motion; constrainer motion work and energy; inertia.

Prerequisite: Course 20b. (4) I (Downing)
[OFFERED 1942-43]

118—SOLID ANALYTIC GEOMETRY. Loci of equations of first and second degrees in three variables. Determinants and Matrices. Methods and principles of use in various fields of higher mathematics.

Prerequisite: Course 20b. (4) II (LeSturgeon)
[OFFERED 1942-43]

120—MATHEMATICAL STATISTICS. Topics considered: Averages, coefficient of dispersion and skewness, graphical representation, Bernolli's theorem, curve fitting, theory of sampling, correlation, and regression lines.

Prerequisite: Course 20a.

(4) III (South)

[OFFERED 1942-43]

122—ACTUARIAL MATHEMATICS. Theory and construction of mortality tables, life annuities, premiums, terminal reserves, etc.

Prerequisites: Mathematics 15, 20a.

(4) III (South)

[OFFERED 1942-43]

124—ELEMENTARY THEORY OF STATISTICS. This course is designed for students, not specializing in mathematics. The content is similar to that of Course 24 except that extra work will be required for graduate credit. Credit not given for both 24 and 124.

[OFFERED 1942-43]

(3) I, II, III, IV (South)

131—AXIOMATICS. A study of the systems of axioms for projective and Euclidean geometry and for real numbers.

[GIVEN 1941-42]

(4) I (John)

132—THE CALCULUS OF FINITE DIFFERENCES. A study of the methods of differencing, finite integration, interpolation, summation of series and difference equations. Topics will include Gregory-Newton formula of interpolation, divided differences, central differences. Euler-Maclaurin formula, Gregory's formula of numerical integration, Lubbock and Woolhouse formulas.

Prerequisite: Course 20a.

(4) II (South)

[GIVEN 1941-42]

203a-d—THESIS. Required in addition to other requirements for the advanced degree.

[OFFERED 1941-42]

(4) I, II, III, IV (Senior Staff)

207a—THEORY OF NUMBERS. This course covers the material in Chapters 1-5, inclusive, of Dickson's "Introduction to the Theory of Numbers."

[GIVEN 1941-42]

(4) I (Latimer)

207b—THEORY OF NUMBERS. Material of Chapters 6-10, inclusive, of Dickson's Introduction to the Theory of Numbers.

[GIVEN 1941-42]

(4) II (Latimer)

208—THEORY OF FUNCTIONS OF A REAL VARIABLE. Theory of the real number systems; elements of point-set theories; measure of sets, study of continuities and discontinuities, and the Riemann and Lebesgue theories of integration.

Prerequisite: Courses

105a and 106a.

(4) II (Cohen)

[OFFERED 1942-43]

211—HIGHER ALGEBRA. This course covers the material in Chapters 2-11 inclusive and Chapter XX in Bocher's "Introduction to Higher Algebra."

Prerequisite: Course 20a.

(4) II (Latimer)

[OFFERED 1942-43]

218—ALGEBRAIC NUMBERS. Introductory course.

Prerequisite: Consent of instructor.

(4) II (Latimer)

[OFFERED 1942-43]

220a-d—MATHEMATICS SEMINAR.

[OFFERED 1942-43]

(3) II (Latimer, John)

221—TENSOR ANALYSIS. A course on the modern extension of vector analysis with special emphasis on applications to differential geometry. Algebraic part of theory of tensors. Quadratic differential forms. Riemannian geometry. Pseudo-Euclidian geometry.

[OFFERED 1942-43]

(4) III (John)

222—ORTHOGONAL SYSTEMS OF FUNCTIONS. This course supplements 221. Eigenvalue problems, Bessel functions, spherical harmonics, hypergeometric and related functions. Asymptotic behavior completeness.

[OFFERED 1942-43]

(4) IV (John)

NOTE.—Other courses such as Advanced Analytics, Modern Geometry, Groups, Fourier's Series, Potential Functions, Algebraic Invariants, Calculus of Variations, Geometric Transformations, Integral Equations, Projective Geometry, Differential Geometry, Complex Variable, Practical Astronomy, Algebraic Curves, Celestial Mechanics, second courses in various subjects, will be given from time to time.

PHYSICS

The Department of Physics is well equipped with instruments of precision and has adequate library facilities necessary to the proper conduct of the following list of advanced and graduate courses:

104—THEORETICAL MECHANICS. This course begins with a careful statement of the fundamental laws of mechanics and the conditions under which they hold. Defined quantities are introduced logically. The work is usually based on some standard text but will be supplemented by lectures. The student is expected to solve a representative list of problems.

Prerequisites: Physics 3c and

Mathematics 20b.

(6) (Pardue)

108—THEORY OF LIGHT. This course is designed to provide a foundation for the study of the nature of light and optical

phenomena. Six topics are treated: wave motion, Maxwell's definition of physical optics, geometrical optics, interference, diffraction, and optical instruments.

Prerequisites: Physics 3c, (5) (Ramsay)
Mathematics 20b.

111—ELECTRICITY AND MAGNETISM. A study of the fundamental theory of electricity and magnetism, dealing with electrons. The physical concepts of electrical quantities are emphasized and systems of units defined. The course covers electrostatic forces and energy, conductors and dielectrics, electrolysis, thermoelectricity, magnetic forces and energy of currents, magnetization of iron, transient and alternating currents, and Maxwell's waves.

Prerequisites: Physics 3c, Mathematics 20b. (5) (Warburton)

113—FUNDAMENTALS OF RADIO. A course in radio primarily for high school teachers. The fundamental principles of vacuum tube characteristics, amplifiers, oscillators, transmitters and receivers; laboratory work in constructing and operating simple radio equipment of a type suitable for radio club projects.

Prerequisite: Physics 1c or (4) (Hahn)
equivalent.

114—VACUUM TUBES AND CIRCUIT THEORY. The theory of vacuum tubes and the measurement of their characteristics; amplifiers and oscillators; piezoelectric phenomena; radiation and propagation of high frequency electric waves; measurement of circuit constants, etc.

Prerequisites: Physics 3c, Mathematics 20b. (4) (Hahn)

116a—PHYSICAL MANIPULATIONS. A course for those who wish to acquire a technique in various physical manipulations, as for example, glass blowing, and the preparation and use of materials used in physical experiments.

Prerequisites: College Physics or (2) (Webb,
College Chemistry. Koppius, Schneider)

116b—PHYSICAL MANIPULATIONS. A continuation of 116a
(2) (Webb, Koppius, Schneider)

117—THEORY OF HEAT. A lecture and problem course dealing with the fundamental principles of heat phenomena. Topics included are: High and low temperatures, elementary kinetic theory, specific heat relations both classical and modern, expansion, conduction, radiation, temperature dependence of physical quantities such as viscosity, surface tension, elasticity, etc.

Prerequisites: Physics 3c, Mathematics 20b. (3) (Koppius)

119—PRINCIPLES OF X-RAYS. A basic course in x-rays for the advanced undergraduate and graduate, dealing with the produc-

tion and properties of x-rays, the mathematical development of the formulae of absorption, scattering, polarization, etc.; methods of wave length measurement; the Compton effect and related quantum phenomena; a review of articles in the various scientific periodicals.
Prerequisites: Physics 3c and (4) (Hahn)
Mathematics 20b.

120—X-RAY TECHNIQUE. An introductory course in x-ray technology dealing with the design and operation of x-ray equipment, the use of intensifying screens, dark-room procedure, etc. Some practice will be given in the radiography of the extremities and teeth with special attention to voltage, current, time and distance factors. Lectures and recitations two hours a week.
Prerequisite: Physics 1c. (3) (Hahn)

122—X-RAY ANALYSIS OF CRYSTALS. Elementary theory of x-ray diffraction and its application to the study of the structure of matter; the methods of Laue, Bragg, crystal rotation and powder spectroscopy, as used in the determination of symmetry, cell size and atomic arrangement.
Prerequisite: Physics 119. (4) (Hahn)

123a—PRINCIPLES OF THERMODYNAMICS. A lecture and problem course covering the first and second laws of thermodynamics. Derivation of thermodynamic relations and their application to processes in physics and allied sciences. Some of the topics considered are: Equation of state for ideal and real gases, specific heat relations, continuity and changes of state, vapor and osmotic pressure, thermodynamic functions and thermodynamic equilibrium.
Prerequisites: Physics 117 or equivalent. (3) (Koppius)

123b—PRINCIPLES OF THERMODYNAMICS. A continuation of Physics 123a. The phase rule and phase equilibria, equilibrium in liquid systems, ionic equilibrium, electromotive force and free energy, the solid state, surface phenomena, radiation, Nernst's heat postulate.
Prerequisite: Physics 123a. (3) (Koppius)

125a, b, c, d—INDIVIDUAL WORK IN PHYSICS (4) (Staff)

131—EXPERIMENTAL PHYSICS: ELECTRICITY. This course provides advanced laboratory practice in electrical measurements. It includes calibration and use of the quadrant electrometer, the d'Arsonval galvanometer and the Type K Potentiometer; studies of dielectrics and magnetization of iron; measurements of capacitance, resistance and inductance; charge and mass of electron; and absolute determinations of electrical quantities.
Prerequisites: Physics 111 or equivalent. (3) (Warburton)

137—EXPERIMENTAL PHYSICS: HEAT. An advanced laboratory course in modern methods of measuring thermal quantities. Opportunity is provided for using the gas thermometer, resistance thermometer, thermopiles, and various types of radiation pyrometers. Construction and calibration of thermocouples. Determination of coefficients of expansion, vapor pressure and densities, viscosity, surface tension, freezing and boiling points, specific and latent heats, ratio of specific heats, heats of combustion, thermal conductivities radiation constants, etc.

Prerequisites: Physics 117 or equivalent.

(3) (Koppius)

138—EXPERIMENTAL PHYSICS: LIGHT. This course is an advanced laboratory study of lenses, mirrors, prisms, gratings, light sources, filters, apertures, and combinations of these elements in optical systems. The experiments include measurements, with such instruments as the photometer, the spectrometer, the interferometer and the polarimeter, etc.

Prerequisites: Physics 108 or equivalent.

(3) (Ramsay)

151—INTRODUCTION TO ATOMIC PHYSICS. A survey of recent physics for those interested in professions other than advanced physics and a useful introduction for those planning to pursue physics intensively. Contents: corpuscular nature of matter, electricity and radiant energy; molecular, atomic and nuclear structure; theoretical viewpoints upon above problems with special emphasis in their compatibility; relativity; astrophysics.

Prerequisites: Physics 3c and Mathematics 20b.

(5) (Pardue)

201—PHYSICAL OPTICS. This course covers in mathematical formulation the theories of interference and diffraction, the theory of optical instruments, the propagation of light in crystalline media and a comparison of the various theories of light.

Prerequisites: Physics 103, one additional "100" course in

Physics, and Mathematics 105a.

(4) (Ramsay)

202—MEASUREMENTS IN OPTICS. A course in the measurements of wave lengths; Fresnell mirrors and biprisms; determination of optical constants by Michelson's interferometer; reflection and transmission grating; spectroscopes and concave grating spectograph. This course is designed to supplement 201.

Prerequisite: Physics 103.

(3) (Ramsay)

204—DYNAMICS OF A PARTICLE, INCLUDING WAVE MOTION. A mathematical presentation of the dynamics of a particle in a conservative medium, and the calculations of the velocity of propagation of various wave forms and their synthesis and analysis

by Fourier's theorem. A study of the velocity of propagation as a function of wave length, including a consideration of varying degrees of freedom and boundary conditions.

Prerequisites: Two "100" courses in Physics, and Mathematics 105a. (4) (Webb)

205—KINETIC THEORY OF MATTER. A course of lectures covering the classical kinetic theory of gases, including the theorems of Clausius, Joule, Maxwell and Boltzman. Coefficients of viscosity and slip. Brownian movements and specific heat relations are treated from the kinetic theory standpoint and equations of change of state are developed.

Prerequisites: Two "100" courses in Physics, and Mathematics 105a. (4) (Koppius)

210a—ELECTRODYNAMICS. The mathematical theory of electricity and magnetism, including an analysis of the energy relations between charges and between currents. Numerous problems are solved by introducing boundary conditions in the general solutions of the differential equations. The expressions for retarded potentials and the Maxwell field equations are developed. Vector notation is used throughout.

Prerequisites: Physics 111 and Mathematics 105a. (4) (Warburton)

210b—ELECTRODYNAMICS. A treatment of the subject from the relativity point of view and on the electron theory. The topics treated will be the simultaneous and retarded fields of a point charge, the derivation and solution of the field equations, the dynamical equation of the electron, radiation from an electron and groups of electrons.

Prerequisites: Physics 111 and Mathematics 105a. (4) (Pardue)

NOTE.—210a and 210b are independent of each other.

211—MAGNETISM. A study of modern theories of magnetism. Lectures and assigned readings. The course includes a brief review of classical electromagnetic theory and quantum theory, describes experimental methods, and treats the Zeeman Effect, the gyromagnetic effect, diamagnetism, paramagnetism, ferromagnetism and magnetism in alloys.

Prerequisites: Physics 111 and Mathematics 105a. (4) (Warburton)

212—CONDUCTION OF ELECTRICITY THROUGH GASES. A course of lectures covering the outstanding discoveries connected with the conduction of electricity through gases at low pressures. The

subjects of diffusion, ionic mobility, e/m measurements, positive ray analysis, isotropes, photo-electricity, etc., are treated.

Prerequisites: Physics 111 and 104, (4) (Koppius)
and Mathematics 105a.

213—ELECTRO-MAGNETIC THEORY OF LIGHT. A course of lectures covering the classical electro-magnetic theory as applied to the optical phenomena of reflection, refraction and polarization. Both isotropic and non-isotropic media as well as conducting and non-conducting media are treated.

Prerequisites: Physics 103, one additional
"100" course in Physics, and (4) (Ramsay)
Mathematics 105a.

215—QUANTUM THEORY. A brief review of the Bohr and Bohr-Sommerfeld theories. The general aspects of wave mechanics, matrix mechanics, uncertainty principle. Application of the above theories to numerous and important problems.

Prerequisites: Physics 217a and (4) (Pardue)
Mathematics 105a.

217a—THEORETICAL PHYSICS. Lectures upon advanced classical and relativity dynamics, hydrodynamics of perfect fluids and of viscous fluids, properties of elastic media. A substantial portion of the treatment of many of the topics will be taken from Page's "Introduction to Theoretical Physics."

Prerequisites: Two "100" courses (5) (Pardue)
in Physics and Mathematics 105a.

217b—THEORETICAL PHYSICS. A continuation of 217a. Statistical mechanics, classical and modern. Origin of spectra including the classical theory of molecular spectra. Transformation of the elements. There is a slight flexibility which may be used to fit the needs of the students.

(4) (Pardue)

218—THERMODYNAMICS. A review of the two classical laws of thermodynamics and their dynamical and statistical mechanical support; Nernst's heat theorem; applications of classical thermodynamics to important problems; relativity thermodynamics.

Prerequisites: Physics 101 (4)
and Mathematics 105a.

220a—SEMINAR. A weekly meeting of the staff and advanced students of the department for presentation and discussion of recent developments in physics as reported in the current literature and of work in progress in the department. Credit is given to those who satisfactorily present papers.

(1) (Staff)

220b-d—SEMINAR. A continuation of 220a.

(1) (Staff)

224—X-RAYS AND THEIR APPLICATIONS TO PHYSICAL PROBLEMS. An advanced study of the theories of production, scattering and absorption of x-rays, the interpretation of x-ray spectra, and advanced experimental technique in x-ray measurements. Much of the material will be taken from "X-Rays in Theory and Experiment" by Compton and Allison.

Prerequisite: Physics 119.

(4) (Hahn)

225—THESIS. This course is intended for graduate students who are prepared to undertake special problems. Except in the case of a purely mathematical problem the entire time is to be devoted to work in the laboratory.

No credit (Staff)

226a—RESEARCH IN PHYSICS.

(4) (Staff)

226b—RESEARCH IN PHYSICS.

(4) (Staff)

227a—RESEARCH IN PHYSICS.

(6) (Staff)

227b—RESEARCH IN PHYSICS.

(6) (Staff)

250a—RELATIVITY. A theory of space and time measurements as applied to physical phenomena.

Prerequisites: Physics 103 and either Physics 111 or 104.

(4) (Webb)

250b—RELATIVITY. A continuation of Physics 250a.

(4) (Webb)

V. AGRICULTURE

AGRICULTURAL EDUCATION (See Education)

AGRICULTURAL ENTOMOLOGY

102—ECONOMIC ENTOMOLOGY. Especially planned for those intending to take up vocational agricultural teaching and county agent work. The life history, control, and means of identification of the common and important economic insects of Kentucky are considered. The making and care of school collections, cages, and aquariums, are described. Lectures, 3 hours; laboratory, 2 hours.
Prerequisite: Agricultural

Entomology 1. (4) IV (Price or Townsend)

103—ECONOMIC ENTOMOLOGY. Fruit and Garden Insects. Life histories, habits, distribution, and control of insects injurious to fruit and garden crops, with special attention to those species found in Kentucky. The various diseases, parasites, and predators of these injurious species are also given attention. Lectures, 3 hours; laboratory, 2 hours.

Prerequisite: Agricultural

Entomology 1. (4) I (Price or Townsend)

104—ECONOMIC ENTOMOLOGY. Farm Crop Insects and Insect Animal Parasites. Life histories, habits, distribution, and control of insects injurious to common farm crops including those of stored grain and forage; also insect parasites of the common farm animals. The various diseases, parasites, and predators of these injurious species are given attention. Lectures, 3 hours; laboratory, 2 hours.

Prerequisite: Agricultural

Entomology 1. (4) III (Price or Townsend)

105a-d—SYSTEMATIC AND TECHNICAL AGRICULTURAL ENTOMOLOGY. Insect physiology, anatomy, ecology, and taxonomy, entomological literature and technique; studies of special groups of insects. Time to be arranged.

Prerequisites: Agricultural Entomology 1, and any one of the following:

102, 103, 104. (3) I, II, III, IV (Price or Townsend)

201a-d—ENTOMOLOGICAL PROBLEMS. Investigations of chosen insect problems, including original work. Discussion and assignment of current insect subjects. Time to be arranged.

Prerequisites: Agricultural

Entomology 1, 103, 104, and 105a-d. (3) I, II, III, IV (Price)

AGRONOMY

COURSES IN CROPS

104—ADVANCED CROPS: FORAGE CROPS. A comprehensive study of forage crops with special emphasis upon their production in Kentucky. Recitations, 4 hours.

Prerequisites: Agr. 1;

Bot. 1b.

(4) I, IV (alternate years) (Fergus)

105—ADVANCED CROPS; TOBACCO AND CEREALS. Tobacco and the important cereal crops are studied in considerable details as regards, distribution, soil, and climatic adaptation, and technique of production. Recitations and lectures, 4 hours.

Prerequisites: Agr. 1, or

equivalent; Bot. 1b.

(4) II (Kinney)

106—FIELD CROP IMPROVEMENT. A study of the principles involved and the technique used in breeding crop plants. Lectures and recitations, 3 hours.

Prerequisites: Agr. 1, or

equivalent; A. I. 61.

(3) II (Kinney)

107—TOBACCO. A course designed for students particularly interested in the more practical phases of tobacco production and grading. Laboratory periods are devoted entirely to practice in grading various types of tobacco leaf. Offered in alternate years. Lectures, 1 hour per week; laboratory, 2 hours. Open to juniors and seniors.

[NOT OFFERED IN 1942-43]

(2) II (Kinney)

200a-c—SEMINAR.

(1) I, II (Agronomy Staff)

204a-b—SPECIAL PROBLEMS IN PRODUCTION OF FORAGE CROPS. Intensive studies of research relative to particular problems in crop production.

Prerequisite: Approval by instructor.

(3) III, IV (Fergus)

205a-b—SPECIAL PROBLEMS IN PRODUCTION OF TOBACCO OR CEREALS.

(3) I, II (Kinney)

COURSES IN SOILS

110—SOIL BIOLOGY. A study of the soil organisms and biological soil processes in relation to soil productivity. Lectures, 1 hour; laboratory, 6 hours.

Prerequisite: Agr. 10; Bact. 52 desirable.

(4) II (Myers)

112a-b—SPECIAL PROBLEMS IN SOILS. Study of some special phase of soils not covered in other courses. Only three credits may be taken in a term.

Prerequisites: Agr 10 and

approval by instructor.

(3) I, II, III, IV

(Roberts, Karraker)

113—METHODS AND RESULTS IN AGRONOMY EXPERIMENTATION. A study of the essentials of reliable field experimentation, including sources of error; a study of field results with emphasis on interpretation. Lectures and discussions, 4 hours.
Prerequisite: Agr. 10. (4) I (Roberts)

115—SOIL MANAGEMENT. Deals with erosion, soil moisture, tillage operations, soil organic matter and nitrogen, including animal and green manures, lime and fertilizers. Lectures, 4 hours.
Prerequisite: Agr. 10. (4) I (Roberts)

119—GENESIS, NATURE, AND CLASSIFICATION OF SOILS. Lectures and recitations, 3 hours.
Prerequisite: Agr. 10 and approval by instructor. (3) III (Karraker)

200a-c—SEMINAR. (1) I, II (Agronomy Staff)

212a-d—RESEARCH IN SOILS. Each course offered each quarter, but only three hours may be taken in a quarter.
Prerequisite: Approval by instructors. (3) I, II, III, IV (Roberts, Karraker)

COURSES IN PLANT PATHOLOGY

200a-c—SEMINAR. (1) I, II (Agronomy Staff)

223a-b—LITERATURE OF PLANT PATHOLOGY. A survey of the literature of plant pathology.
Prerequisite: Agr. 23. (4) I, II (Valleau)

FARM ENGINEERING

101a-d—SPECIAL PROBLEMS. This course is designed to permit advanced students to make an intensive study of some phase of agricultural engineering in which they are particularly interested.
Prerequisite: F. E. 1 and approval by instructor. (4) I, II, III, IV (Kelley, Young)

102—DAIRY ENGINEERING. A study of the engineering principles involved in the construction, installation, operation, and management of machinery and equipment used in the handling and manufacturing of dairy products. Lectures and recitations, 3 hours; laboratory, 2 hours.
Prerequisite: F. E. 1. (4) II (Kelley)

104—RURAL ELECTRIFICATION. This course is designed to give students information on how to obtain electric service and on the problems involved in the selection, operation, and care of electrical equipment in the home and on the farm. Lecture and recitations, 3 hours.
 (3) II (Kelley)

105—ENGINEERING PRACTICES IN SOIL MANAGEMENT. Surveying, mapping, and determining areas of farm land; designing farm drainage systems; problems in controlling erosion with terraces and other mechanical structures. Lectures, 2 hours; laboratory, 4 hours.

(4) III, IV (Kelley)

ANIMAL INDUSTRY

COURSES IN ANIMAL HUSBANDRY

100—ANIMAL BREEDING. Breeding plans, inbreeding, line-breeding, outcrossing; disease resistance; inheritance of lethal characters; genetics of sex, heredity in cattle, sheep, swine, horses and laboratory animals. To be given alternate years. Offered 1942-43. Lectures, 5 hours.

Prerequisite: A. I. 61

(5) II (Steele)

101—FARM BUTCHERING AND CURING MEATS. Slaughtering and blocking out of beeves, veals, hogs, and lambs; judging on foot and on the hook; wholesale and retail cuts, meat curing with special emphasis on pork. Lectures, 2 hours; laboratory, 6 hours.

Prerequisite: A. I. 1.

(5) I, II, (Wilford)

102—ADVANCED LIVESTOCK JUDGING. Primarily for judging team candidates. Open only to those who have made good standings in the prerequisite courses. Offered 1942-43. Lecture and laboratory.

Prerequisites: A. I. 1, 2

(4) I (Wright)

103—WORK STOCK PRODUCTION. History and importance of the horse and mule industry. Selection, breeding, feeding and management of horses and mules. Lectures, 2 hours; laboratory 2 hours.

Prerequisites: A. I. 1, 81

(3) II (Horlacher)

104—SHEEP PRODUCTION. History and importance of the sheep industry. Selection, breeding, feeding and management of sheep. Production and handling of wool. Lectures, 3 hours; laboratory, 2 hours.

Prerequisites: A. I. 1, 81

(4) III, IV (Horlacher)

105—BEEF PRODUCTION. History and importance of the beef cattle industry. Selection, breeding, feeding and management of beef cattle. Lectures, 3 hours; laboratory, 2 hours.

Prerequisites: A. I. 1, 81

(4) III (Garrigus)

106—PORK PRODUCTION. History and importance of the swine industry. Selection, breeding, feeding and management of swine. Lectures, 3 hours; laboratory, 2 hours.

Prerequisites: A. I. 1, 81

(4) I (Wilford)

109a-d—SPECIAL PROBLEMS IN ANIMAL HUSBANDRY. Approval of instructor required.

(3) I, II, III, IV (Animal Husbandry Staff)

200a-c—ANIMAL INDUSTRY SEMINAR.

(1) I, II, III, (Staff)

201a-d—RESEARCH IN MEATS. Problems involving original investigation.

(3) I, II, III, IV (Wilford)

203a-d—RESEARCH IN HORSE HUSBANDRY. Problems involving original investigation.

(3) I, II, III, IV (Horlacher)

204a-d—RESEARCH IN SHEEP HUSBANDRY. Problems involving original investigation.

(3) I, II, III, IV (Horlacher)

205a-d—RESEARCH IN BEEF CATTLE HUSBANDRY. Problems involving original investigation.

(3) I, II, III, IV (Garrigus)

206a-d—RESEARCH IN SWINE HUSBANDRY. Problems involving original investigation.

(3) I, II, III, IV (Wilford)

COURSES IN DAIRYING

120—DAIRY CATTLE BREEDING. The application of genetics to present day problems of breed and herd improvement, the progeny testing of sires, type classification, selective registration. The rise and fall in popularity of prominent families and strains within the leading dairy breeds. Lectures, 3 hours; laboratory, 2 hours.

Prerequisite: A. I. 61

(4) III, IV (Alternate) (Ely)

121—DAIRY CATTLE FEEDING AND MANAGEMENT. The application of the principles of nutrition to dairy cattle feeding; current methods contributing to maximum efficiency in the production of quality dairy products on the farm. Lectures, 3 hours; laboratory, 2 hours.

Prerequisite: A. I. 81

(4) I, IV (Alternate) (Ely)

122—ADVANCED DAIRY CATTLE JUDGING. Primarily for judging team candidates. Open only to those who have made good standings in the prerequisite courses. Not offered 1942-43. Lectures and Laboratory.

Prerequisites: A. I. 21, 23

(2) I (Ely)

123—DAIRY BACTERIOLOGY. The application of bacteriological principles to the production and processing of milk and other

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dairy products involving mode of entrance of micro-organisms into dairy products, effects of their growth and methods for their control. Lectures, 2 hours; laboratory, 6 hours.

Prerequisite: Bact. 52 or 102

(5) II (Morrison)

124—BUTTER. A study of the various problems and processes involved in the manufacture and storage of butter. Lecture, 1 hour; laboratory, 6 hours.

Prerequisite: A. I. 21

(3) I (Barkman)

125—ICE CREAM. A study of the problems and process involved in the manufacture and handling of ice cream. Lecture, 1 hour; laboratory, 6 hours.

Prerequisite: A. I. 21

(3) II (Barkman)

126—MARKET MILK. A study of the problems connected with the production and handling of market milk. Lectures, 2 hours; laboratory, 3 hours.

Prerequisite: A. I. 21

(3) III (Morrison)

127—CHEESE. A study of problems and processes involved in manufacture and ripening of cheddar and other common cheeses. Lecture, 1 hour; laboratory, 6 hours.

Prerequisite: A. I. 21.

(3) II (Barkman, Morrison)

128—TECHNICAL CONTROL OF DAIRY PRODUCTS. Various chemical and bacteriological tests used in the control of production or processing of dairy products. Laboratory and recitations, 6 hours. Not offered 1942-43.

Prerequisites: A. I. 21, 123.

(3) III (Morrison)

129a-d—SPECIAL PROBLEMS IN DAIRYING. Approval of instructor required.

(3) I, II, III, IV (Dairy Staff)

221a-d—RESEARCH IN DAIRYING. Special problems involving original investigation on the part of the student in either dairy production or dairy manufacturing.

(3) I, II, III, IV (Ely, Morrison)

See also A. I. 200, Animal Industry Seminar.

COURSES IN POULTRY HUSBANDRY

140—POULTRY BREEDING. Genetic principles involved in poultry breeding; disease resistance; inheritance of egg production and related characters; development of breeding programs. To be given in alternate years. Not offered 1942-43. Lectures 4 hours.

Prerequisite: A. I. 61

(4) II (Steele)

141—ADVANCED POULTRY PRODUCTION. Studies of control measures in poultry diseases, nutrition, marketing, flock management and replacement. Lectures, 3 hours; laboratory and demonstrations, 4 hours.

Prerequisite: A. I. 41

(5) I, IV (Ringrose)

149a-d—SPECIAL PROBLEMS IN POULTRY. Approval of instructor required.

(3) I, II, III, IV (Ringrose)

241a-d—RESEARCH IN POULTRY. Problems involving original investigation.

(3) I, II, III, IV (Ringrose)

See also A. I. 200, Animal Industry Seminar.

COURSES IN GENETICS

161—GENETICS. Lectures of A. I. 61 and assigned readings. Primarily for graduate students.

(4) III, IV (Steele)

162—ADVANCED GENETICS. Concerned chiefly with physical basis of heredity, mutations and chromosomal aberrations, linkage, genetics and development, and reports on current literature. Lectures, 4 hours.

Prerequisites: A. I. 61 or 161.

(4) II (Steele)

169a-d—SPECIAL PROBLEMS IN GENETICS. Approval of instructor required.

(3) I, II, III, IV (Steele)

261a-d—RESEARCH IN GENETICS. Problems involving original investigation.

(3) I, II, III, IV (Steele)

See also A. I. 100, Animal Breeding; A. I. 120, Dairy Cattle Breeding; A. I. 140, Poultry Breeding; A. I. 200, Animal Industry Seminar.

ANIMAL PATHOLOGY

101—ANATOMY AND PHYSIOLOGY OF DOMESTIC ANIMALS. Correlation of structure and function of the organs and systems of the animal body; a study of anatomy and physiology as related to work offered in courses in livestock judging, animal nutrition, butchering, animal breeding, infectious diseases and animal hygiene. Lectures, 3 hours; demonstration lecture, 1 hour.

Prerequisite: Junior standing.

(4) I (Hull)

102—INFECTIOUS DISEASES OF DOMESTIC ANIMALS. Distribution, general nature, manner of dissemination, methods of control, prevention and eradication of infectious and parasitic diseases of animals. Lectures, 3 hours; demonstration lecture, 1 hour.

Prerequisite: A. P. 101 or approval by instructor.

(4) II (Dimock)

103—ANIMAL HYGIENE. A consideration of both general and specific measures designed to promote health and prevent disease. Animal Hygiene includes feed and water, housing and ventilation, yards and pastures and sanitation and environment. All are a part of the many problems to be considered in a program of animal health.

Prerequisites: A. P. 101 and 102, or approval by instructor.

(4) III (Dimock, Hull)

104-a-c—SPECIAL PROBLEMS IN ANIMAL PATHOLOGY.

Prerequisites: A. P. 101, 102 and 103 or approval by instructor.

(3) I, II, III (Dimock, Hull)

201-a-c—INVESTIGATIONS IN ANIMAL DISEASES. This course is open only to persons who have a degree in veterinary medicine.

Prerequisites: A. P. 101, 102, 103 or equivalent.

(3) I, II, III, IV (Dimock)

ECONOMIC AND SOCIAL ASPECTS OF AGRICULTURE

Courses are offered in the fields of agricultural economics and rural sociology leading to the degrees of Master of Science, Master of Science in Agriculture and Doctor of Philosophy. Courses in the Department of Farm Economics and the Department of Markets and Rural Finance will be included in the major requirements for these degrees with consent of the major advisor.

FARM ECONOMICS

101—PRODUCTION ECONOMICS. Considers the economic analyses appropriate to the examination of problems of agricultural production. Includes a study of the costs and return and combination of production elements, the scale of farm organization, enterprise relationships, interregional competition, production control and similar problems dealt with largely from a theoretical point of view. Intended principally for seniors and juniors in the College of Agriculture and Home Economics.

Prerequisites: F. E. 1 and approval of instructor.

(3) I (MacFarlane)

110—FARM MANAGEMENT. The course consists in a study of the principles underlying the choice of proper types of farming; the comparative merits of intensive and extensive farming; the relation of livestock to farm management; the best size of farm; the relation of capital to farm profits; farm rental systems; the management of men and horse labor and machinery for greatest profits; the layout of fields and farm buildings; farm accounts, in-

cluding the annual inventory; the choice of a region for farming and important considerations in buying a farm; the other vital questions of farm organization and management.

Prerequisite: Farm Economics 1. (4) I, II, III, IV (Bradford)

111—ADVANCED FARM MANAGEMENT. A course giving advanced consideration to the fundamental principles underlying the choice of a farm, the selection of crop and livestock enterprises, the management of labor and equipment and the organization of these elements into an efficient and profitable farm business. Trips are made to nearby farms that illustrate these principles and study is devoted to the records of other successfully operated farms of the state.

Prerequisite: Farm Economics 110. (3) I (Nicholls)

112a-c—SPECIAL PROBLEMS IN FARM MANAGEMENT. Students enrolling in this course are assigned some special problem, as for example, the cost of producing some class of farm products such as dairy products, crop or livestock, the problem of profitable farm organization in a specified community; farm taxes, etc. Students are required to review the literature of the problem and report on it regularly to the instructor. In most cases they are also required to examine, classify and tabulate special statistical data previously collected by the College of Agriculture and to relate these data to the problem. Each student presents a final report showing results and conclusions.

(3) I, II, III (Nicholls)

113—TYPES AND SYSTEMS OF FARMING. Included in this course will be a critical study of the business organization and management of successful Kentucky farms in the several type-of-farming areas of the state. Several field trips will be made to farms whose operators have achieved outstanding financial success while at the same time maintaining or increasing the productivity of their farms. One of these will be a two days trip, the class leaving Friday morning and returning Saturday evening, during which the farms visited will be representative of several of Kentucky's major farming type areas.

Prerequisite: Farm Economics 110. (3) III (Nicholls)

114a-c—FARM MANAGEMENT FOR A CHANGING AGRICULTURE. An application of the principles of economics to the farm business. The development of organization and management plans using basic resources. Consideration is given to the impact of war and defense programs on farm organizations and management in Kentucky.

(1) IV (Bradford)

115 FARM ACCOUNTING. An application of some of the fundamental principles of accounting to the study of the organization and operation of farms. Lectures, 2 hours; laboratory, 2 hours.

(3) II (Bradford)

120—LAND ECONOMICS. A study of land resources in relation to present and prospective needs. An examination of the economic characteristics of land and of the bases for classifying land will be made. Land income, land value and tenure will be considered in relation to land use and conservation.

Prerequisite: Farm Economics 1
or consent of instructor.

(3) I (Allen)

121—LAND USE PLANNING. A study of the national needs and national policies which led to the land-use pattern of 1930; social and economic implications of the destruction and loss of soil resources; contribution and limitations of land use planning toward the development of socially desirable programs for the use of natural resources. Particular attention will be given to the land use problems of the southern United States.

Prerequisites: Farm Economics
120 or consent of instructor.

(3) II (Allen)

122—LAND VALUE AND APPRAISAL. Consideration will be given to the capitalization process, and other devices for valuing farm land; thoroughgoing study will be made of the appraisal procedures of the Federal Land Banks and of other credit institutions; particular attention will be given to special difficulties which arise in appraising and valuing land in the state of Kentucky and in the southern United States.

Prerequisite: Farm Economics 120
or consent of instructor.

(3) II (Allen)

123a-c—CURRENT LAND PROBLEMS. A study of the requirements for and the supply of agricultural land in the United States. A consideration of the contribution of land classification and land use planning toward the development of socially desirable policies and programs for using natural resources.

(1) (Allen)

200a-c—AGRICULTURAL ECONOMICS SEMINAR. Preparation and presentation of papers on current problems in the field of agricultural economics. Round table discussions, centering on the subject matter treated in the various reports, are held at each meeting.

(0) I, II, III (Staff)

201a-c—RESEARCH IN FARM ECONOMICS. Open to graduate students. The student enrolling in this course is assigned an advanced problem in the field of farm economics. Stress is placed on

the plan, technique and scientific method used by the student in developing his research problem. The student is required to submit a report embodying his methods, generalizations and conclusions.

(3) I, II, III, IV (Nichols and Staff)

202a—ECONOMICS OF PRODUCTION AS APPLIED TO AGRICULTURE. This course places emphasis upon the fundamental considerations essential to the study of production organization in the economy of modern agriculture. Theoretical analysis will be applied to such questions as the combination of the agents of production, scale and intensity of production, comparative advantage of interregional analysis, and to an evaluation of national agricultural policies and programs. Students will be expected to do supervised investigation of specific problems in the field.

Prerequisite: Consent of instructor. (3) II (MacFarlane)

202b—ECONOMICS OF PRODUCTION AS APPLIED TO AGRICULTURE. A continuation of 202a.

(3) III (MacFarlane)

203—COST, PRICE, AND PRODUCTION RELATIONSHIPS IN AGRICULTURE. Consideration is given to the different concepts of cost which are encountered in the agricultural research field; considerable attention is paid the applicability of the traditional cost-price rationale in the agricultural industry. Members of the seminar will be given an opportunity to appraise the advanced non-mathematical literature in this field.

Prerequisite: Consent of instructor. (3) III (MacFarlane)

COURSES IN RURAL SOCIOLOGY

101—RURAL SOCIOLOGY. Introductory study of rural people and their communities; the distribution, mobility and vitality of rural population; characteristics of the rural community, rural groups and institutions, orientation to rural community problems. Lectures, recitations, individual community reports.

Prerequisite: Sociology 1 or Economics 1. (3) I, IV (Beers)

102—RURAL LEADERSHIP AND SOCIAL CHANGE. Rural social structure and culture; types of leadership in relation to rural social organization; functions of leadership; control and selection in leadership; practical problems of rural leadership; special emphasis on attitudes and the relation of leadership to social change; present changes and trends and the place of leadership in modern rural life. Lectures, recitations, student projects.

Prerequisite: R. S. 101 or consent of instructor. (3) II (Williams.)

103a-c—SPECIAL PROBLEMS IN RURAL LIFE. Supervised individual study in selected sub-fields of rural sociology. Population, standards of living, neighborhood and community change, and rural institutions are among the available fields for investigation.

Prerequisite: Consent of instructor. (3) I, II, III (Oyler)

104a-c—RURAL LIFE. The response of rural people and their social organization to current trends in southern states and in the nation; population; community; rural groups and institutions; rural attitudes.

(1) IV (Beers)

201a-c—RESEARCH IN RURAL SOCIOLOGY. Individual graduate research with correlated study of rural social research types and methods.

Prerequisite: Introductory course in Statistics.

(3) I, II, III (Beers, Oyler, Williams)

202—SEMINAR IN RURAL ORGANIZATION. Organization behavior of farmers; social analysis of farmers' organizations and other rural interest groups, national, state, local; comparative study of group types; trends affecting the social structure of rural communities; agricultural planning and social planning in rural communities.

Prerequisite: Consent of instructor. (3) I (Beers)

203—SEMINAR IN RURAL SOCIAL ATTITUDES. The nature and genesis of rural attitudes and their relation to rural social control. Analysis of contemporary rural attitudes and opinions.

Prerequisite: Consent of instructor. (3) II (Williams)

SOCIOLOGY (See Social Science)

SOCIAL WORK (See Social Work)

MARKETS AND RURAL FINANCE

100—MARKETING. Principles and methods of marketing farm products; methods of marketing at country points and in central markets; classes and functions of middlemen; marketing specific commodities; market prices; marketing costs; and cooperative marketing. Lectures, 4 hours.

Prerequisite: Farm Economics 1. (4) I, II, IV
(Price and White)

101—COOPERATIVE MARKETING. Principles, methods and problems involved in the cooperative marketing of farm products; legal, organization, and management problems which cooperatives encounter for different classes of farm products. Lectures, 3 hours.

Prerequisite: M. & R. F. 100. (3) II (White)

102—MARKETING TOBACCO. Principles, methods and problems in marketing tobacco including systems of marketing, organization of auction markets, functional problems of warehouse operations, efficiency in the pricing of tobacco, monopolistic aspects of competition, and international movement of tobacco and tobacco products.
Prerequisite: M. & R. F. 100. (2) II (Clark)

103—MARKETING LIVESTOCK. Analysis of local, auction and terminal market organization including marketing agencies, market institutions, marketing services, public regulation, direct marketing, and cooperative organization.
Prerequisite: M. & R. F. 100. (2) II (Price)

104—MARKETING DAIRY PRODUCTS. Economic aspects of markets for the principal dairy products including factors affecting the efficiency of dairy marketing organizations, price policies, quotation systems, cooperative and marketing agreements.
Prerequisite: M. & R. F. 100. (2) III (Price)

110—AGRICULTURAL PRICES. A study of factors influencing prices of farm products, price trends, cycles, supply-price relationships, the effects of inflation and deflation upon agriculture, price legislation, and the current outlook for individual farm products.
Prerequisite: Farm Economics 1. (3) I (Card)

111—MARKET PRICES. A study of price making forces in agricultural markets over relatively short periods of time. Inter-regional and intermarket price relationships; effects of grading, price quoting, methods of sale, extent of competition, speculation, and marketing agreements.
Prerequisites: Farm Economics 1, M. & R. F. 100 (3) II (White)

120—FARM FINANCE. Principles of financing the production and marketing of farm products; credit needs of agriculture, including short-time, intermediate and farm mortgage-credit requirements; organization and operation of the federal farm loan system, and other agencies which furnish credit for agriculture. Lectures, 3 hours.
Prerequisite: Farm Economics 1. (3) I (Clark)

130—AGRICULTURAL STATISTICS. Methods of collection and use of agricultural statistics with special reference to crop and livestock estimates and the census; tabular and graphic presentation of data; analysis of time series; graphic correlation and sampling as applied to agricultural surveys.
Prerequisite: Mathematics 24 or 124. (3) III (Card)

140—AGRICULTURAL POLICY. General development of the principles underlying agricultural policy, including analysis of the place of agriculture in the general economy, goals or objectives of

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agricultural policy; causes and development of the present agricultural problem; appraisal of current or proposed programs, and legislation for remedial action.

Prerequisite: Farm Economics 1.

(5) III (Price)

141a-c—CURRENT PROBLEMS IN AGRICULTURAL ECONOMICS. This course emphasizes recent developments in agricultural marketing, production and credit. Especial consideration of federal production adjustment programs, organization of agricultural credit, marketing agreements and cooperation.

Prerequisite: Farm Economics 1.

(1) IV (Price)

200a-c—SEMINAR. Analysis of current problems in field of marketing and rural finance.

(1) I, II, III (Staff)

202a-c—SPECIAL PROBLEMS IN MARKETING AND RURAL FINANCE. Open to graduate students who have the necessary training and ability to do research on individual problems. The course consists of individual work on some selected problem related to agricultural marketing or agricultural finance.

Prerequisite: Approval of head of department.

(3) I, II, III (Staff)

204—RESEARCH IN MARKETING. Laying out the research project. Analysis of date.

Prerequisite: M. & R. F. 100.

(3) II (Price)

210—THEORY OF AGRICULTURAL PRICES. The application of economic theory to the field of agricultural prices. Variability and flexibility in the price structure in terms of price behavior and with respect to some important factors influencing long time, cyclical and seasonal changes in agricultural prices. Attention will be given to the effects of charges in industrial production and consumer incomes, foreign demand, mechanization of agriculture, production cycles, middlemen's margins, etc.

Prerequisites M. & R. F. 100.

(3) II (Price)

211—RESEARCH METHODS IN AGRICULTURAL PRICES. This course is primarily a critical and historical study of the application of various methods of analysis to specific types of price problems, including the assembling of data, the theory and practice of sampling, supply-price relationships and methods of testing the results of analysis. Students entering the course should have a broad preparation in general economics, agricultural economics and statistics.

Prerequisite: M. & R. F. 130.

(3) I (Card)

240—EFFECTS OF POLITICAL, ECONOMIC AND CULTURAL FORCES ON RURAL LIFE IN AMERICA. A course for graduate students in the heritages and political and economic forces that have

affected the life and the property of the people engaged in agriculture. The period covered is from colonial times to the present. Lectures, readings, and assigned topics, three hours per week.

(3) III (McVey)

HOME ECONOMICS

COURSES IN FOODS AND NUTRITION

101—PRINCIPLES OF NUTRITION. Nutrition functions of food and nutritive requirements of the body are presented for those who wish to know the value to mental and physical efficiency of good food selection. Lectures, 4 hours. Not open for credit to students registered in home economics. (4) III, IV (Grundmeier)

102—DIETETICS. Daily food requirements at different age levels, emphasis being given to satisfying the divergent needs of families and other groups. Practice is given in normal dietaries. Lectures, 3 hours; laboratory, 6 hours.

Prerequisites: H. E. 6, 11. (6) I, II, III, IV (Grundmeier)

103a-b—PUBLIC SCHOOL NUTRITION. Study of the nutrition class movement with emphasis on causes and effects of malnutrition, methods of judging nutrition and height and weight standards. Development of health program in public schools. Lectures, 2 hours.

Prerequisite or parallel: H. E. 102 (2) I, II, IV (Grundmeier)

103c-d—PUBLIC SCHOOL NUTRITION. Opportunities are given to make and collect illustrative material for courses in applied nutrition. Observations of nutrition classes, school cafeterias and other nutrition projects are made. Laboratory, 2 hours.

Prerequisite or parallel: 103a or 103b.

(1) I, II, IV (Grundmeier)

105a-c—EXPERIMENTAL COOKERY. Study of factors that affect the results obtained in cooking and food preparation processes. Experimental work is carried out under controlled conditions and special emphasis is placed on physical, chemical and mechanical conditions. Lecture, 1 hour; laboratory, 6 hours.

Prerequisites: Chem. 7, H. E. 5 or approval of instructor.

(4) I, II (Grundmeier)

106a-d—FIELD WORK IN NUTRITION. Nutrition problems at different age levels with emphasis on the child in the public school, correlated with surveys and experimental studies to show the relation between diet selection and its physical and mental effects. Lecture and laboratory.

Prerequisite: H. E. 103a or b, or

approval of instructor. (1) I, II, III, IV (Grundmeier)

107—WORKSHOP IN NUTRITION. This workshop gives opportunity to workers in the field of nutrition to obtain help in presenting the program of "Nutrition for Defense." The nutrition problem is analyzed in its relation to agricultural and socio-economic problems. The latest findings in technical information on nutrition are presented. Opportunity is given to collect visual aid material for teaching nutrition.

(5) IV (Erikson)

108a-d—SEMINAR IN NUTRITION. Investigations of recent research in nutrition. Lectures, 2 hours.

Prerequisite: Senior or graduate standing. (2) I, II (Erikson)

111—ADVANCED NUTRITION. Metabolic processes of the body in normal and diseased conditions, correlating the metabolic changes due to disease with diet therapy. The laboratory includes sugar tolerance tests; protein and mineral balance experiments; biological tests for vitamins. It also includes practice in the planning, calculation and preparation of therapeutic diets. Lectures, 3 hours; laboratory, 6 hours.

Prerequisite: H. E. 102.

(6) II (Erikson)

114. FOOD PRESERVATION. The principles of preserving food by drying, canning, pickling, salting and quick freezing. Practice in the canning of fruits, vegetables and meats; the pickling of fruits and vegetables and making of jellies and preserves.

Prerequisites: Bact. 52 and H. E. 5.

(3) IV (Helton)

200a-d—SEMINAR IN NUTRITION. (3) I (Erikson)

206a-d—ADVANCED FIELD WORK IN NUTRITION. This course is a continuation of H. E. 106a-d with investigations of recent research in the field. Lecture and laboratory.

Prerequisites: H. E. 103, 106a, or approval of instructor.

(1) I, II, III, IV (Grundmeier)

COURSES IN CLOTHING, TEXTILES, RELATED ART

125—ADVANCED TEXTILES. Individual term problems. Lectures, 3 hours.

Prerequisites: H. E. 25, Econ. 1. (3) I; alternate IV (Latzke)

126—ADVANCED COSTUME DESIGN. A survey of costume throughout the ages. Planning of modern costumes. Lectures, 2 hours; laboratory, 4 hours.

Prerequisite: H. E. 26.

(4) II; alternate IV (Seeds)

127—ADVANCED CLOTHING. Individuality in costume is emphasized. Costumes are designed, draped and constructed without the use of commercial patterns. Lecture, 1 hour; laboratory, 6 hours.

Prerequisite: H. E. 27.

(4) I, II, IV (Seeds, Latzke)

129—INTERIOR DECORATION. A study of color, line and texture as they are used to create effective interiors suited to modern living. Lectures, 2 hours; laboratory, 4 hours.
Prerequisites: H. E. 25, Art 30b.

(4) I, III; alternate IV (Seeds)

137—ADVANCED CLOTHING PROBLEMS. Designed to suit the needs of the individual student. Some suggested problems are children's clothing; tailoring; remodeling; clothing economics; clothing for the family. Lectures, 2 hours; laboratory, 4 hours.
Prerequisite: H. E. 127.

(4) III, IV (Seeds, Latzke)

237a-d—SEMINAR IN TEXTILES AND CLOTHING. Investigation of special textile and clothing problems. Lectures, 3 hours.

(3) I, II, III, IV (Seeds, Latzke)

COURSES IN INSTITUTION MANAGEMENT

141—INSTITUTION ORGANIZATION AND ADMINISTRATION. Principles of institution organization, types of institution service, modern industrial tendencies, advertising, personnel and financial control. Lectures, 3 hours; laboratory, 2 hours.
Prerequisites: H. E. 41 and 42.

(4) II (Helton)

142a-c—INSTITUTION MANAGEMENT. Application of scientific principles of institution management. Practice is given in office management and in the different units of service. Lecture, 1 hour; laboratory, 6 hours.

Prerequisite: H. E. 141

(4) III (Helton)

143—INSTITUTION EQUIPMENT. Selection, arrangement, cost and care of institution equipment. Problems of lighting, heating, ventilation, refrigeration for institution food preparation and service units. Lectures, 3 hours; laboratory, 2 hours.

Prerequisites: H. E. 42 and 141.

(4) IV (Helton)

COURSES IN CHILD DEVELOPMENT

152—CHILD CARE AND DEVELOPMENT. Study of the care and training of the child from pre-natal life through the pre-school period; standards for normal development—physical, social, emotional and mental; includes observations of pre-school children and participation in nursery school activities. Meetings with parents are required. Lectures, 3 hours; laboratory, 4 hours. Lectures and laboratory will be blocked in a six-week period.

Prerequisites: A. & P. 3, Psych. 7.

(5) I, II, III, IV (Mumford, Beiter)

153—ADVANCED CHILD DEVELOPMENT. Detailed study of special features of child development during the first nine years.

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Observation in the nursery school and at the University school with special reference to body management, posture, expressive movements, language and speech, conduct in novel situations, emotional expression, conduct in relation to companions, and conduct in problem solving situations. Lectures, 2 hours; laboratory, 4 hours.
Prerequisite: H. E. 152 (4) I, III, IV (Beiter)

154—FAMILY LIVING. The inter-locking relationships of community and family living. Emphasis is given to the influence of home conditions on the members of the family, and the results of such influence on attitudes and behaviors that affect community living. Lectures, 4 hours.
Prerequisites: H. E. 61, 152, Econ. 1, Soc. 1 or R. S. 101.
(4) II, IV (Mumford)

155—THE CHILD AND HIS CLOTHING. A study of the appreciation of the needs in children's clothing, the physiological and psychological functions, as well as the selection, costs and care of children's clothing.
(3) IV (Mumford)

156—PLAY AND PLAY MATERIALS. A study of the appreciation of the importance of the right kind of play materials in the development of pre-school children; of materials to use, costs, labor and time; construction of toys.
(3) IV (Beiter)

COURSES IN HOME MANAGEMENT

161—CONSUMER PROBLEMS. A study of consumer buying and its social and economic aspects. An analysis of the common problems of the manufacturer, the merchant and the consumer in order to understand better the needs and responsibilities of each group. Lectures, 4 hours.
Prerequisite: Econ. 1 (4) I, II, IV (Deephouse)

162a—HOME MANAGEMENT AND FAMILY RELATIONSHIPS. The philosophy and principles of home management. A study of the management of resources available to the family for optimal development. Includes the mechanics of time, energy and money management. Emphasis is placed on personal development, social and family relationships. Lectures, 4 hours.
Prerequisites: Econ. 1, H. E. 61. (4) I, II, III, IV (Deephouse)

162b—HOME MANAGEMENT AND FAMILY RELATIONSHIPS. A residence period in the University home management house is required of all seniors in home economics. The course consists of laboratory work affording experience in the application of principles presented in other courses.
Prerequisite: H. E. 162a; *prerequisite or parallel:* H. E. 102.
(5) I, II, III, IV (Deephouse, Taylor)

262—ADVANCED HOME MANAGEMENT AND FAMILY RELATIONSHIPS. A course affording opportunity for special study of social and economic problems affecting family life. Lectures, 3 hours.

Prerequisites: H. E. 162a-b.

(3) II (Deephouse)

GENERAL COURSES

170a-d—SPECIAL PROBLEMS. Intensive work on specific phases in any of the fields of home economics, namely: food preparation, meal planning and service, nutrition, clothing, textiles, costume design, housing, child development, institution economics, consumer problems, home management, dietetics, interior decoration.

(2) I, II, III, IV (Staff)

270a-d—SPECIAL PROBLEMS. All fields.

(2) I, II, III, IV (Staff)

HOME ECONOMICS EDUCATION (See Education.)

HORTICULTURE

103—POMOLOGY. Pome Fruits. A course dealing with the theory and practice of commercial apple growing. Adaptation, soil relations, fruitfulness, and orchard management problems are studied in detail. Lectures, 3 hours; laboratory, 2 hours.

Prerequisite: Horticulture 1.

(4) I (Waltman)

104—POMOLOGY. Stone Fruits. A detailed study of commercial peach, plum and cherry growing. Lectures 3 hours; laboratory, 2 hours.

Prerequisite: Horticulture 1.

(4) I (Waltman)

[NOT OFFERED 1942-43]

105—POMOLOGY. Small Fruits. A detailed study of the care and management of commercial plantings of strawberries, raspberries, and other bush fruits. Lectures, 2 hours; laboratory, 2 hours, first half; lectures, 3 hours a week, last half.

Prerequisite: Horticulture 1.

(3) I (Waltman)

106a-c—SPECIAL PROBLEMS IN POMOLOGY. This course is designed to meet the need for advanced work.

Prerequisites: Horticulture 1, 103, 104, 105,

and approval of instructor.

(3) I, II, III (Waltman)

110—THE HOME VEGETABLE GARDEN. Culture of vegetables for the farm garden. Importance, types and classification of vegetable crops, soils and soil preparation, fertilizers, soil improvement crops, plant beds and plant growing, seeding methods, succession and companion crops, cultivation practices, insect and disease control, harvesting care, storage of products, and requirements of the chief types and classes of vegetables. Lectures 4 hours; laboratory 2.

(5) I (Emmert)

111—GROWING VEGETABLE PLANTS UNDER GLASS. Production of vegetable plants grown for transplanting, preparation and care of seed beds, types of hotbeds and cold frames, simple greenhouse structures, manure, electricity and fuel heating. Preparation and use of compost, soil preparation, fertilizers, seed treatment, watering and ventilating, sanitation, hardening plants, transplanting, and potting. Lectures, 3 hours; laboratory 2 hours.

(4) I (Emmert)

112a-c—SPECIAL PROBLEMS IN VEGETABLE CROPS. This course is designed to meet the need for advanced work.

Prerequisites: Horticulture 1, 110, (3) I, II, III (Emmert)
and approval of instructor.

120—LANDSCAPE GARDENING. A study of the principles involved in the arrangement of plants, buildings, walks and drives. This includes the development of the lawn, the correlation of the plantings and buildings and applies to the home, and public buildings, such as schools, churches and courthouses. Lectures, 4 hours; laboratory, 2 hours.

(5) II, III (Elliott)

121—ADVANCED LANDSCAPE GARDENING. A continuation of Horticulture 120, with special attention given to design and the use of planting materials. Lectures, 3 hours; laboratory, 2 hours.

Prerequisite: Horticulture 120. (4) II (Elliott)

122—FLORICULTURE. A study of the fundamental principles involved in the growing and use of flowers. This includes production under glass and in the flower garden. The flowers are studied by groups, and include annuals, biennials, and perennials. Lectures 4, laboratory 2 hours.

(5) II, III (Elliott)

123—PLANT PROPAGATION. A detailed study of the principles and methods of propagating plants. Lectures, 3 hours; laboratory, 2 hours.

Prerequisites: Hort. 1; Bot. 1a, 1b. (4) III (Elliott)

124a-c—SPECIAL PROBLEMS IN ORNAMENTAL HORTICULTURE. This course is designed to meet the need for advanced work. Approval by the instructor required.

Prerequisites: Hort. 1, 120, 121; (3) I, II, III (Elliott)
Bot. 1a, 1b.

200a-c—SEMINAR. (1) I, II, III (Olney and Staff)

201a-c—RESEARCH IN HORTICULTURE.

Prerequisite: Approval by instructors. (3) I, II, III (Olney and Staff)

FORESTRY

101a—FARM WOODLANDS. History of forests and woodlands in the United States and Kentucky. Silvics, important trees of Kentucky, structure and physiology of trees. Ecology of woodlands; volume of woodland products. Lectures, 3 hours; laboratory, 2 hours.
(4) II (Wiggin)

101b—FARM WOODLANDS. Principles of forest mensuration, increment and yield of growing timber, care and improvement of the farm wood lot. Natural and artificial reproduction, protection, utilization and marketing. Lectures, 3 hours; laboratory, 2 hours.
Prerequisite or concurrent:

Forestry 101a.

(4) II (Wiggin)

VI. EDUCATION

GENERAL STATEMENT OF REGULATIONS GOVERNING GRADUATE WORK IN THE COLLEGE OF EDUCATION

Work leading to the Doctor's degree with a major in education must conform to the same rules and regulations as prescribed in the general requirements, pages 14 to 18 of this Bulletin.

The regulations governing graduate work leading to the degree of Master of Arts in Education and to the degree of Master of Science in Education are as follows:

1. Of the graduate work offered by any candidate for the master's degree with a major in education, at least 18 quarter hours must be in courses at the "200" level or above for persons completing the degree requirements on the 36 quarter hour basis and at least 27 quarter hours must be in courses at the "200" level or above for persons completing the degree requirements on the 54 quarter hour basis.
2. The total number of credits (graduate and undergraduate combined) in education offered by any candidate for the master's degree must be at least 45 quarter hours. The number of graduate credits in education must be at least 18 quarter hours for students graduating on the 36 quarter hour basis and at least 27 quarter hours for students graduating on the 54 quarter hour basis.
3. Two plans are provided for the work which leads to the master's degree:
 - A. The first plan consists of 36 quarter hours of graduate work with an average standing of B or better, 36 weeks of residence, and the writing of a thesis
 - B. The second plan requires the completion of 54 quarter hours of graduate work with an average standing of B or better, 48 weeks of residence and no requirement of a thesis. Both plans involve the passing of an oral examination covering the major field and the minor field, if any.
4. Students who are candidates for the master's degree in education must earn at least one-half of the credit and residence required while in full residence at the University of Kentucky.
5. If a student desires to qualify for the Master of Arts or the Master of Science degree rather than for the Master of Arts in Education or the Master of Science in Education, he must satisfy the language requirement.

6. An adviser must be selected before the close of the first term the student is in residence at the University of Kentucky. This adviser should be selected only after consultation with the dean of the Graduate School and the dean of the College of Education.

To satisfy the one-year minimum residence requirement for the doctorate degree, candidates who major in education shall be in attendance three full quarters at least two of which shall be done during the last year of work toward this degree. This requirement shall apply to all candidates whose committees had not been approved by September 1, 1935.

ADMINISTRATION

101—SCHOOL ORGANIZATION. A course designed to familiarize the prospective teacher with those activities of school organization and administration in which he may be expected to participate. Topics emphasized are administrative control, selection of teachers, tenure, loads, salaries, retirement, supervision, classification and promotion, attendance, community relationships, and professional ethics.

(5) I, II, III, IV (Seay)

148—ADVISERS OF GIRLS AND DEANS OF WOMEN. This course is designed for teachers, advisers of girls, and deans of women with particular reference to the needs of Kentucky schools. Some of the problems studied are: the adjustment of students; the aims, organization, and content of the extra-curricular program; the technique of counseling; work with groups; student government; vocational and educational guidance; record forms and office organization.

(4) (Holmes)

198—THE ADMINISTRATION OF PUPIL PERSONNEL. This course deals with the school census, enforcement of attendance, personnel records, marking, pupil progress, and classification. The course is designed primarily for prospective superintendents and attendance officers

(4) IV (Seay)

202—LOCAL SCHOOL ADMINISTRATION. A general course in public school administration for the prospective superintendent of a county or city school system. The course deals with the state as an educational agency, the local school district, the board of education, the superintendent, the internal organization for the administration of a school system, problems of the teaching personnel, problems of pupil personnel, business management, finance and accounting, the curriculum, school building planning and man-

agement and the supervision of instruction. This is one of the basic courses in school administration and should be taken at or near the beginning of the student's graduate program.

(5) I, IV (Seay or Meece)

203—CONSTITUTIONAL AND LEGAL BASIS OF PUBLIC SCHOOL ADMINISTRATION. A study of court decisions in order to discover the legal principles involved in practical problems of school administration. Topics: The school and the state; school districts; school officers; relations of school districts and municipalities; authority of school districts and district officers; school board procedure and records; tort liability of school districts; personal liability of school officers; contractual authority and liability of boards of education; school money; the school debt; acquisition and use of school property; employment and dismissal of teachers; school attendance; rules and regulations of school boards; discipline and punishment of pupils; textbooks and studies.

*Prerequisite: Education 202
or 213 or 232*

(4) II, III, IV (Ligon)

204—REDIRECTING EDUCATIONAL EFFORTS AND RESOURCES TO MEET WAR CONDITIONS. This course will deal with a study of the public school and its responsibility for aid in the war effort. It will give particular attention to the defense program in the public school, to the contribution of vocational education in the national emergency, and to such other topics as morale, physical fitness, mental fitness, and problems that will face our nation in the period immediately following the war.

(IV)

206—PROBLEMS OF COLLEGE TEACHING. This course covers among others the following topics: Methods commonly used in college teaching; bases for measuring instruction; marking systems; qualifications for college teaching; and efforts being made to improve college instruction.

(4) (Taylor)

207—SCHOOL BUILDING AND EQUIPMENT. The major topics considered are the measurement and evaluation of existing building facilities, planning new school buildings, financing the building program, and building operation and maintenance. The student should have had considerable graduate work in education before enrolling in this course.

*Prerequisite: Education 202 or
its equivalent.*

(4) (Chamberlain)

210—SPECIAL PROBLEMS IN SCHOOL ADMINISTRATION. An independent work course for students doing their first year of graduate work in education.

Prerequisite: Education 101 or 202.

(4) IV (Seay)

213—STATE SCHOOL ADMINISTRATION. The administration of American education from the standpoint of the federal and state governments. The course deals with federal relations to education, the state as an educational agency, local units for the administration of education, the scope of the school system, state school support, state control of the material environment and equipment, the training and certification of teachers, and teachers' contracts, tenure and retirement.

II, IV (Seay)

221a-b—SEMINAR IN ADMINISTRATION. A critical study of selected problems in school administration.

(4)

225—SUPERVISION OF INSTRUCTION. Topics considered are the development of supervision, purpose of supervision, organization for supervision, planning supervision, use of classroom visitation and demonstration lessons, use of teachers' meetings and individual conferences, use of the course of study, use of tests and measurements, equipment and supplies, the teacher and the pupil. The student should have had Education 202 or its equivalent before enrolling in this class.

(5) III, IV (Seay or Meece)

231—FINANCING PUBLIC EDUCATION. Topics covered are budgetary procedure, school costs, school indebtedness, state finance, fiscal reports, and accounting procedures. These topics are treated primarily from the standpoint of the superintendent of schools. The student should have had Education 202 or its equivalent before enrolling in this class.

II, IV (Seay or Meece)

232—HIGH SCHOOL ADMINISTRATION. A course designed primarily for high school principals and prospective administrators. Topics emphasized are secondary school organization, the principal, the staff, the pupil, program of studies, schedules, community relationships, records and reports, articulation, library, plant, finance, and the aims of secondary education.

(4) I, III, IV (Ligon)

233—THE ADMINISTRATION OF THE TEACHING PERSONNEL. A specialized course in school administration, primarily for prospective superintendents. The course will emphasize principles and practices in teacher preparation, teacher selection and placement, measurement of teaching efficiency, salaries, tenure, retirement, teaching loads, sick leave and related problems and personnel records.

(4) I (Seay or Chamberlain)

236—BUSINESS ADMINISTRATION OF PUBLIC EDUCATION. A specialized course for prospective superintendents cover-

ing the following aspects of school administration: The organization for business management; the scope of business administration; appraisal, depreciation and insurance of school property; maintenance of the school plant; plant operation; selection, training and pay of the custodial staff; purchase and management of supplies; textbook management; selection and purchase of equipment; inventories; and transportation.

(4) (Seay)

238—TRENDS IN HIGHER EDUCATION. This course will survey modern tendencies in American higher education in the following areas: Scope and development, objectives, organization, administration, curricula, finance, and faculty and student personnel. It is designed to serve the needs of present and prospective college administrators and teachers and others interested in developments in higher education. For those desiring special instruction in the work of the registrar a program of laboratory work will be arranged.

(4) (Chamberlain)

239—THE ADMINISTRATION OF PUBLIC SCHOOLS IN RELATION TO OTHER AGENCIES. This course deals with the relationship of public schools with other agencies and services, such as the public health service, the agricultural extension service, employment bureaus, public libraries, parent-teacher associations, and professional organizations of teachers. A study is made of the functions and organization of such agencies. The general aim of the course is to give the school administrator an understanding of the social agencies which should be included in the total education program of a community.

(4) (Seay)

250a-b—EDUCATIONAL PROBLEMS AND COMMUNITY RESOURCES. The aim of this course is to prepare students to participate in programs which are especially planned to improve instruction. The following topics will be studied and discussed in class: (1) the utilization of community resources in improvement of instruction; (2) national, regional, and local agencies especially concerned with programs designed to improve instruction; (3) experiments and demonstrations dealing with new methods and content in education; and (4) the place of administration and supervision in programs for improvement of instruction.

(4) IV

276—ADMINISTRATIVE PROBLEMS IN TODAY'S EDUCATION. This course has to do with present-day problems of persons in administrative positions in public education. It is designed to be of assistance particularly to superintendents of schools.

(4) (Seay)

301a-b—RESEARCH PROBLEMS IN EDUCATIONAL ADMINISTRATION. An independent research course. The student will confer with the instructor whenever either or both of them deem it advisable.

Prerequisite: One year of graduate work. (4) I, II, III, IV (Seay)

321a-b—RESEARCH PROBLEMS IN HIGHER EDUCATION. Same type of course as Education 301.

Prerequisite: One year of graduate work. (4) I, II, III, IV
(Taylor and Chamberlain)

AGRICULTURAL EDUCATION

179—DETERMINING CONTENT IN VOCATIONAL AGRICULTURE. Interpreting data as a basis for course building. Working out the content of a four-year course in vocational agriculture. (4) IV (Hammonds)

281—TEACHING PREVOCATIONAL AGRICULTURE. Designed to prepare men for the teaching of agriculture. About one-half of the course is practice.

(11) I, II, III (Hammonds, Tabb, and Truitt)

182—EVENING SCHOOL AND PART-TIME COURSES IN AGRICULTURE. A general introduction to evening school and part-time work with some observation of work in both of these fields.

(3) I, II, III (Hammonds)

188—FARM PRACTICE SUPERVISION. Practice and directed study supervising farm practice of pupils in vocational agriculture.

(1) (Hammonds, Woods, and Armstrong)

280—METHOD IN TEACHING VOCATIONAL AGRICULTURE. The principles of method are applied to the teaching of agriculture. For men with experience in teaching vocational agriculture.

(4) IV (Hammonds)

281—TEACHING PREVOCATIONAL AGRICULTURE. Each student works out the content of a course in prevocational agriculture, including selecting the teaching materials. Aims, purposes, and methods of teaching are considered.

(4) (Woods)

287a—ADVANCED PROBLEMS IN AGRICULTURAL EDUCATION. The specific problems considered vary according to the needs of the group.

(5) I, II, III (Hammonds and Woods)

287b—SELECTING TEACHING MATERIALS. Specific references and other teaching materials are selected to be used in the teaching of vocational agriculture.

(4) IV (Armstrong)

287c—EVENING SCHOOLS. Designed to prepare men to teach adult farmers. Includes organizing the school, determining content, method of teaching, follow-up work.

(4) IV (Hammonds and Woods)

287d—DIRECTING FARM PRACTICE. Considers farm practice as a method of teaching. Takes up standards, planning, supervision, records.

(4) IV (Hammonds)

287e—TEACHING FARM SHOP. Includes determining content for shop, securing and equipping the shop, and methods of teaching farm shop.

(4) IV (Woods)

287f—PART-TIME SCHOOLS. Determining content and teaching part-time courses in vocational agriculture.

(4) (Hammonds and Woods)

289a-b—RESEARCH IN AGRICULTURAL EDUCATION. The student works on some problem of importance to agricultural education.

(5) I, II, III (Hammonds and Woods)

BUSINESS EDUCATION

104—FOUNDATIONS OF BUSINESS EDUCATION IN THE HIGH SCHOOL. This course is designed to give to the student preparing to teach commerce in the high school an understanding of the origin, the status, and the objectives of business education in the secondary school.

(4) I, IV (Lawrence)

158a—TEACHING SECRETARIAL SUBJECTS. Special techniques and devices for teaching shorthand, typewriting, and secretarial office practice are considered.

(3) II, IV (Lawrence)

158b—TEACHING ACCOUNTING. This course provides materials and techniques in the teaching of accounting.

(3) III, IV (Lawrence)

184—TEACHING OFFICE APPLIANCES. Methods and materials to be used in teaching the various office appliances to high school pupils. Dictating machines, mimeographs, multigraphs, graphotypes, mimeoscopes, addressing machines, filing, calculating machines, and other appliances will be used.

(3) IV (Lawrence, Guy)

192—TEACHING GENERAL BUSINESS. Objectives of the general business course are studied critically and a syllabus prepared for teaching this subject.
(4) IV (Lawrence)

208a-b-c—PROBLEMS IN BUSINESS EDUCATION. Some of the more advanced problems in the field are studied. The type of problems considered is influenced by the interests and needs of the group. Some of these problems are: testing in business subjects; extra-curricular activities in commerce; job studies; placement and follow-up; types of equipment; and supervision.
(4) III, IV (Lawrence)

256—THE SOCIAL BUSINESS SUBJECTS IN HIGH SCHOOL. The various social business subjects will be examined to determine their contribution to the objectives of business education.
(4) IV (Lawrence)

257a-b—SEMINAR IN BUSINESS EDUCATION. A study of current literature in business education with special reference to trends in this field.
(1) IV (Lawrence)

259—THE COMMERCE CURRICULUM. Business subjects offered in the high school are examined critically to determine their content and the place each should occupy in high school curricula. A course of study is developed for each subject.
(5) II, IV (Lawrence)

260—TEACHING CONSUMER COURSES IN THE HIGH SCHOOL. This course is designed to provide techniques and devices for teaching pupils in high schools the various aspects of consumer education. The emphasis is placed on procedures rather than on content and the student is presumed to have a background of training in economics before taking the course.
(4) I, IV (Lawrence)

DISTRIBUTIVE OCCUPATIONS

112—DETERMINING TEACHING CONTENT IN DISTRIBUTIVE OCCUPATIONS. This course is planned to meet the needs of persons engaged as instructors in the field of distributive occupations. It will cover the analysis and course construction in the field of distributive occupations.
(4) I, II, III, IV (Baker)

115a-b—PROBLEMS IN DISTRIBUTIVE EDUCATION. The course deals with problems involved in teaching vocational distributive education in day, part-time, and evening schools. The problems will be selected in accordance with the needs and desires of students registered in this course.
Prerequisites: Education 112.

and Education 128. (4) I, II, III, IV (Baker)

116—PROBLEMS OF THE COORDINATOR IN DISTRIBUTIVE OCCUPATIONS. The purpose of this course is to discuss some of the problems facing the coordinator as he acts in the capacity of intermediary between the school and the business world. Problems in placing students in stores, problems in follow-up methods, problems in store contacts and problems in securing the cooperation of personnel management will be discussed.

(4) I, II, III, IV (Baker)

128—TECHNIQUE OF TEACHING DISTRIBUTIVE OCCUPATIONS. This course is a study of the methods of teaching as applied to distributive occupations education. The purpose of the course is to train prospective teachers to teach in the field of distributive occupations.

(4) I, II, III, IV (Baker)

EDUCATIONAL PSYCHOLOGY

118—EDUCATIONAL TESTS AND MEASUREMENTS FOR ELEMENTARY TEACHERS. The problems of measurement in the elementary school; formal and informal tests, marking systems, etc.
Prerequisite: One quarter of Psychology.

(4) III, IV (Ross)

119—FOUNDATIONS OF ELEMENTARY EDUCATION. The psychology of the child in the primary and intermediate grades.
Prerequisite: One quarter of Psychology.

(4) I (Ross)

122—EDUCATIONAL TESTS AND MEASUREMENTS FOR HIGH SCHOOL TEACHERS. The problems of measurement in the junior and senior high school, with special emphasis on standardized tests. The construction and use of new type tests, use and limitations of traditional examinations, marking systems, etc.

(5) I, II, III, IV (Ross)

147—FOUNDATIONS OF SECONDARY EDUCATION. The psychology of the student in junior and senior high school.
Prerequisite: One quarter of Psychology.

(4) I, IV (Ross)

216—SEMINAR IN TESTS AND MEASUREMENTS. A critical study of certain problems in measurement. Individual work.
Prerequisite: Education 122.

(4) IV (Ross)

223—EDUCATIONAL STATISTICS. A non-mathematical study of the applications of statistical and graphical methods to educational data.

(5) III, IV (Ross)

254—PROBLEMS IN EDUCATIONAL PSYCHOLOGY. A critical survey of the conflicting schools of psychology, theories of learning, etc.

Prerequisite: One year of Psychology. (4) I, II, IV (Ross)

ELEMENTARY EDUCATION

110—ADVANCED INDUSTRIAL ARTS. This course will deal primarily with the industrial process involved in records and shelter suitable for classroom experimentation. As a result of work in this course the teacher should be able to guide children in the construction activities pertaining to the study of records and shelter. Some of the experiences he will receive will be in the fields of book binding, block printing, paper decorating, toy making, elementary woodwork, and interior decorating.

(3) III, IV (Haines)

133—DIRECTED TEACHING IN THE ELEMENTARY SCHOOL. This course is designed to give the student experience with and practice in the program for the whole day in a modern elementary school. (Note: The student must spend from 8:00 a. m. until 2:00 p. m. in the classroom for the quarter. One hour per day additional, 2:00 p. m. to 3:00 p. m., is spent with the critic teacher and supervisor. A student who has had three credits in practice teaching may take this course with reduced hours and reduced credits.)

Prerequisites: Education 44 and senior standing in the elementary curriculum. (15) I, II, III, IV (Duncan and Training Teachers)

141—PROBLEMS IN DIAGNOSTIC AND REMEDIAL READING. A laboratory course in problems of prevention, diagnostic and remedial work in reading. An opportunity will be provided to observe demonstrations of the use of instrumentation in diagnosis and correction of reading difficulties and the application of these clinical procedures to problem cases.

(4) IV (Duncan)

172—TEACHING READING IN THE ELEMENTARY SCHOOL. A practical application of principles derived from psychology and research. Discussion of aims, primary reading, activities leading to reading, reading in the intermediate grades, oral and silent reading, phonics, diagnostic and remedial work, means of testing and suitable material for each grade.

(5) II, IV (Duncan)

173—TEACHING LITERATURE TO CHILDREN. A study of the literature for children from kindergarten to Grade V. Reading and book reports from various types, folklore, modern fantastic tales,

poetry, realistic stories, biography, myths, and legends. Children's interests at different ages and stages of development; story telling and dramatization.

(5) II, IV (Duncan)

174—PRE-SCHOOL THEORY AND MANAGEMENT. A study of the nature, development, care and training educationally of the pre-school child. Emphasis will be placed on the formation of proper emotional and social habits and standards for right environment set-up. Students will schedule regular periods for observation and assistance in the Kindergarten (by appointment)

(4) I (Clark)

176—PRE-SCHOOL ORGANIZATION AND TEACHING. A study of the pre-school movement in Europe and America. A study of the organization, equipment curriculum and methods of pre-school teaching. Students taking this course will schedule regular periods (by appointment) for observation and assistance in the University Kindergarten.

(4) II (Clark)

196—SCIENCE IN THE ELEMENTARY SCHOOL. This course is planned to give a background of elementary science usable with children in the first six grades. The course includes planning units of work, organizing and using materials and references, use of illustrative material, excursions, and making bibliographies for teachers and children.

(5) I, IV (Estelle Adams)

212—THE ELEMENTARY SCHOOL. This course is designed to help the superintendent, elementary principal, and elementary supervisor in a better understanding of the modern elementary school. The activity program, objectives, research and study in the skills and content subjects of the elementary curriculum are discussed from the standpoint of supervision.

(5) III, IV (Duncan)

224—ORGANIZATION AND SUPERVISION OF STUDENT TEACHING. This course has been planned for students preparing to do critic teaching in the fields of elementary and secondary education. It includes the basic principles underlying the entire program and deals with specific problems for critic teachers on the elementary and secondary level.

(5) II, IV (Williams, Duncan)

229—THE ELEMENTARY PRINCIPAL. This course deals with problems related to the elementary principalship, such as the professional preparation, selection and status of the principal; relation to other administrative officers, supervisors, teachers, pupils and parents; problems of attendance, discipline, health and record; the appli-

cation of sound principles to the improvement of teaching. Emphasis will be placed on the community relationship of elementary principles and teachers and ways in which they may cooperate and improve the life of the community. Attention will also be given to problems presented by members of the class as outgrowth of their experiences.

(5) I, IV (Duncan)

308a-b—RESEARCH PROBLEMS IN ELEMENTARY EDUCATION. An independent research course. The student will confer with the instructor whenever either or both of them deem it advisable.

Prerequisite: One year of graduate work.

(4) I, II, III, IV (Duncan)

HISTORY OF EDUCATION

117a—HISTORY OF EDUCATION. This course is a survey of the history of secondary education from the Greek period to the present time.

(4) (Patrick)

117b—HISTORY OF EDUCATION. A survey of the history of elementary education beginning with Athenian education and closing with present elementary education in America.

(4) (Patrick)

201a—EARLY HISTORY OF EDUCATION IN THE UNITED STATES. A course in the history of the development of the public school system in the United States, covering the development of education among the American colonies, and of the states up to 1870. It is designed to give a background for the appreciation of the aims and purposes of modern education

(4) II, IV (Patrick)

201b—RECENT EDUCATIONAL HISTORY IN THE UNITED STATES. A course in recent educational history of the United States, since about 1870, covering more intensely the recent development of state-supported public education in the United States, with emphasis on state supported education and the relationship of the states and federal government in promoting public education, with some attention to the development of private education. It is designed to give a background for the appreciation of the aims and purposes of modern education.

(4) III, IV (Patrick)

219—GREAT EDUCATORS AND THEIR WORK. A study of the lives and writings of the world's educators to enable the student to appreciate more fully the ideals, attitudes and contributions to society of the men and women in education who have served best.

(4) I, II, III, IV (Patrick)

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220—COMPARATIVE EDUCATION. A course giving comparisons of systems of education.

(4) III, IV (Taylor)

235—HISTORY OF EDUCATION IN KENTUCKY. A course designed to give the student a historical background of education in Kentucky.

(4) I, III (Patrick)

237a-b—RESEARCH IN HISTORY OF EDUCATION. An independent work course for students of education.

(4) I, II, III, IV (Patrick)

HOME ECONOMICS EDUCATION

160—TECHNIQUE OF TEACHING HOME ECONOMICS. A study of methods of teaching as applied to home economics.

Prerequisites: Home Economics 26

(4) I, II

6a and b, 29, 3, 51; *Education 147* (Parker or Spickard)

162—DIRECTED TEACHING IN HOME ECONOMICS. Practical application of methods in teaching various phases of home economics.

Prerequisite: Education 160. (8) I, II, III, (Parker or Spickard)

165—ADULT EDUCATION IN HOME ECONOMICS. This course deals with the problems involved in teaching vocational homemaking in day, part-time, and evening schools.

(4) I, II, III, IV (Parker or Spickard)

261—HOME ECONOMICS SUPERVISION. A course planned primarily to help prepare teacher trainers and supervisors of home economics education.

Prerequisites: Education 160, 162, (4) IV (Parker or Spickard)

experience in teaching and approval of instructor.

263—CURRENT PROBLEMS IN HOME ECONOMICS EDUCATION. A study of some recent developments in the field of home economics education.

Prerequisites: Education 160 and (4) IV (Parker or Spickard)

162; experience in teaching.

264—MODERN TENDENCIES IN HOME ECONOMICS EDUCATION. This is a basic course for graduate students in home economics education. It is designed to acquaint students with modern tendencies in education. Some problems considered are the contribution of home economics to the general education of boys and girls, evaluation, and integration.

(4) (Parker)

266a-b-c—SEMINAR IN HOME ECONOMICS EDUCATION. Provision is made for students to make individual investigations and report on special problems in home economics education.

(3) I, II, IV (Parker or Spickard)

267—DIRECTED SUPERVISION IN HOME ECONOMICS EDUCATION. This course includes teaching home economics classes for observation, directing student teachers under the guidance of a supervising teacher, visiting schools with the itinerant teacher trainer in different sections of the state, and organizing teaching materials. This course may be taken parallel to or following Education 261.

Prerequisites: Two years' teaching experience

and recommendation by the (4) (Parker or Spickard)

*Department of Home Economics
Education.*

268—HOME ECONOMICS CURRICULUM CONSTRUCTION. A study of the underlying principles of curriculum building for junior and senior high school home economics.

Prerequisites: Education 160, 162. (4) (Parker or Spickard)

269—EDUCATION IN HOME ECONOMICS EDUCATION. This course is intended to acquaint teachers of home economics with techniques used in measuring attainment in home economics in the junior and senior high school and college.

Prerequisite: Teaching experience.

(4) IV (Parker)

INDUSTRIAL EDUCATION

108—COORDINATION TECHNIQUES IN INDUSTRIAL EDUCATION. This is a course designed to meet the needs of persons functioning as coordinators in part-time or evening industrial education. It analyzes the social, educational, and economic responsibilities of the coordinator and ties up these findings with the local school program in a better system of student training and student accounting.

(3) I, II, III, IV (May, Hankins)

123—VOCATIONAL GUIDANCE. A course designed to give teachers, principals, superintendents and welfare workers a comprehensive view of the factors in vocational guidance, the agencies contributing to or influencing life choices and an analysis of the human and economic resources of a given civic unit.

(4) (May, Hankins)

143—MODERN INDUSTRIAL ANALYSIS. This course is designed to meet the needs of persons who wish to secure a working knowledge of modern industrial organization, trends in industrial educational policies, and the proper approach to and analysis of these problems as they affect the industrial vocational teacher.

(3) I, II, III (May, Hankins)

171a-b—PRINCIPLES AND PHILOSOPHY OF INDUSTRIAL EDUCATION. This course is planned primarily for the advanced student in industrial education. It covers the general philosophy of vocational education as it is tied up with the problems and principles of industrial education.

(3) I, II, III, IV (May, Hankins)

183—METHODS IN INDUSTRIAL EDUCATION. This course is planned to give the student a working knowledge of the most approved methods in instructional management, including lesson planning, in the field of vocational industrial education.

(4) IV (May, Hankins)

MUSIC EDUCATION

251—PROBLEMS IN PUBLIC SCHOOL AND COMMUNITY MUSIC. This course, open only to advanced students, will consider problems in teaching, supervising, organizing, and leading public school and community music activities. Students in-service will have an opportunity to bring problems from their own school or community situation; and, when possible, the instructor will visit them in the field. Projects, demonstrations, readings, and discussion.

(5) II, IV (Capurso)

252—FIELD PROBLEMS IN MUSIC. This course is designed to permit the teacher or leader in the field to work out his local problems as an independent graduate teaching project under the guidance of the music staff.

(2) III, IV (Capurso)

253—INDEPENDENT WORK IN MUSIC EDUCATION. This course is designed for graduate students who undertake research problems in music education and is to be conducted in regular consultation with the instructor

(5) III, IV (Capurso)

PHILOSOPHY OF EDUCATION

114—EDUCATIONAL SOCIOLOGY. A study in the application of sociological findings to the field of education within the school and home.

(4) (Patrick)

127—THE ELEMENTARY CURRICULUM (For Elementary Teachers). A study of the philosophy and technics of curriculum construction and some practical work in construction.

(4)

175a-f—MODERN EDUCATIONAL PROBLEMS. A brief survey of some of the problems in modern education.

(4)

175g—MODERN EDUCATIONAL PROBLEMS: EDUCATION OF HANDICAPPED CHILDREN. A discussion of procedures to be used in the education of the group of children who are handicapped

physically, mentally, and emotionally. Attention will be given to work with individual children who are home-bound as well as with groups. (4) IV

175i—MODERN EDUCATIONAL PROBLEMS: COMMUNITY ORGANIZATIONS IN ADULT EDUCATION. This course deals with problems of community organizations as they affect the adult life of citizens of the community served. (4)

186—VISUAL TEACHING. A course in methods and technique of visual instruction. Special emphasis is placed on charts, slides, graphs, maps, still pictures, motion pictures, and other visual aids, their effective use in teaching and the planning of outlines and lessons involving their use. Attention will also be given to the administration of visual aids in the school

(4) I, IV (Clifton or Starnes)

200a-b—PHILOSOPHY OF EDUCATION. This is an advanced course dealing with the philosophy underlying the larger educational problems of today.

Prerequisite: 16 quarter hours in education. (4) (Adams)

205a-b—REVIEW OF CURRENT EDUCATIONAL LITERATURE. An extensive study of current educational literature as found in educational periodicals.

Prerequisite: 16 quarter hours in education. (4) II, III (Adams)

222—METHODOLOGY OF EDUCATIONAL RESEARCH. This course is intended to acquaint the student with the various techniques of research and to aid him in methods of attack on his own particular research problems.

Prerequisite: 16 quarter hours in education. (4) II, IV (Taylor)

226a-d—PROBLEMS OF THE SECONDARY SCHOOL CURRICULUM. This course may deal with any problem arising in any field of the secondary school curriculum. Students enrolling in this course will be required to leave on file with the College of Education a complete report of each problem studied. (4)

227a—PRINCIPLES OF CURRICULUM CONSTRUCTION. A survey of modern curriculum making as carried on in progressive city school systems, laboratory schools and state school systems. Also an intensive study of the principles underlying curriculum revision.

Prerequisites: Teaching experience and

16 quarter hours in education. (4) III, IV (Adams)

227b—TECHNIQUES IN CURRICULUM CONSTRUCTION. This course has to do with the techniques being used to determine content of courses of study.

Prerequisite: Teaching experience;

16 quarter hours Education. (4) IV (Adams)

228a-d—SEMINAR IN EDUCATION. This course has been planned for graduate students majoring in education, to be given under the direction of the faculty of the College of Education.

(1) I (Taylor)

230—PROBLEMS OF EDUCATIONAL SOCIOLOGY. An advanced course in the application of sociology to the educational field. *Prerequisite: 16 quarter hours Education, (4) I, II, IV (Patrick) including Education 114.*

245—ORGANIZATION OF AUDIO-VISUAL AIDS. The topics to be covered in this course are: beginning the audio-visual program, qualifications and duties of the audio-visual aids, sources and criteria for judging equipment and supplies, the audio-visual aids budget, projection mechanics, in-service teacher training.

(4) (Clifton and Starnes)

246—MOTION PICTURES IN EDUCATION. The topics covered are: the history of the educational motion picture, technique in the use of films, educational scenario writing, grading and scoring films, motion picture appreciation.

(4) (Clifton and Starnes)

275—ADVANCED PROBLEMS IN PHILOSOPHY OF EDUCATION. This course will deal with problems in modern education. Special emphasis will be given to such problems as social strains and conflicts, the cultural and community foundations, and the readjustment and reconstruction of our various traditions and the process of solving these problems from the standpoint of the schools.

(4) IV

SECONDARY EDUCATION

105—FUNDAMENTALS OF SECONDARY EDUCATION. Deals with laboratory methods of instruction. Units: fundamental processes, control, operation administration.

(4) I, II, III, IV (Ligon)

107—SAFETY EDUCATION. This course is designed to give teachers the knowledge, technique, and skills for the teaching of safety education in all its aspects. Particular emphasis will be placed on driver education and the problems related thereto.

(4)

111—REMEDIAL READING IN THE SECONDARY SCHOOL. A study of diagnostic and remedial work with reading disability cases in the junior and senior high school. This course is designed to enable the teacher to diagnose reading difficulties and to remedy them. Observation, case studies, and practice in remedial work with children will be required of all students. The course includes a critical study of the investigations and literature in the field.

(3) (Duncan)

142—DIRECTED TEACHING IN ART. This course has been planned for teachers who contemplate becoming supervisors of art in the public schools.

Prerequisites: Education (see Professional Major) and 27 quarter hours in Art. (9) I, II, III
(Haines)

153—DIRECTED TEACHING IN ENGLISH. Topics: course of study, minimum essentials, materials, methods, testing. Part I, languages and composition; Part II, literature. Observation and practice, five hours; conference, two hours.

Prerequisites: Education (see professional Major) and 27 quarter hours in English. (9) I, II, III, IV
(Anderson and Shipman)

154—DIRECTED TEACHING IN FOREIGN LANGUAGES. Topics: aims and objectives, course of study, methods, tests, equipment, analysis of textbooks. Observation and practice, five hours; conference, two hours.

Prerequisites: Education (see Professional Major) and 27 quarter hours in subject to be taught. (9) I, II, III, IV
(West and Topham)

155—DIRECTED TEACHING IN THE SCIENCES. Topics: aims and objectives, courses of study, methods, tests, equipment. General science, biology, physics, and chemistry. Observation and practice, five hours; conference, two hours.

Prerequisites: Education (see Professional Major) and 27 quarter hours in subject to be taught. (9) I, II, III, IV
(Kemper and Keffer)

156—DIRECTED TEACHING IN MATHEMATICS. Topics: course of study, materials, methods, testing. Observation and practice, five hours; conference, two hours.

Prerequisites: Education (see Professional Major) and 27 quarter hours in Mathematics. (9) I, II, III, IV
(Keffer)

157—DIRECTED TEACHING IN THE SOCIAL STUDIES. Topics: objectives, preparation of the teachers, courses of study, methods, supplementary materials, visual instruction, testing and professional helps. Observation and practice, five hours; conference, two hours.

Prerequisites: Education (see Professional Major) and 27 quarter hours in subject to be taught. (9) I, II, III, IV
(Peck and Shipman)

169a, b, c—DIRECTED TEACHING IN PHYSICAL EDUCATION. This course has been planned for students who desire to

become directors of physical education and coaches of athletics in the public schools.

Prerequisites: Education (see Professional Major) and 27 quarter hours in Physical Education. (3) I, II, IV (Gilb)

177a, b, c—DIRECTED TEACHING IN MUSIC. This course has been planned for teachers who contemplate becoming supervisors of music in the public schools.

Prerequisites: Education (see Professional Major) (3) I, II, III (Capurso and Mason)

193—DIRECTED TEACHING IN BUSINESS EDUCATION. This course will include practice in junior business training; in shorthand; in typewriting and in such other commercial subjects as are commonly taught on the secondary level.

Prerequisites: Education (see Professional Major) and 27 quarter hours in commerce. (9) I, II, III, IV (Betz)

214a-b—THE SECONDARY SCHOOL. This course is designed to acquaint the prospective principal or superintendent with the nature and function of the secondary school. This is one of the basic courses in the field of administration and should be taken at or near the beginning of the student's graduate program.

241—PROBLEMS IN TEACHING THE SOCIAL STUDIES. The purpose of this course is to acquaint the teacher with the most approved methods of teaching the social studies. Source materials dealing with the problems of teaching, such as research findings, yearbooks, and periodicals will be investigated and current practices in the best high schools of the country will be stressed.

(4) IV (Peck)

242—PROBLEMS IN TEACHING ENGLISH. The purpose of this course is to acquaint the teacher with the most approved methods of teaching English. Source materials dealing with the problems of teaching, such as research findings, yearbooks, and periodicals will be investigated and current practice in the best high schools of the country will be stressed.

(4) IV (Anderson)

243—PROBLEMS IN TEACHING MATHEMATICS. The purpose of this course is to acquaint the teacher with the most approved methods of teaching mathematics. Source materials dealing with the problems of teaching, such as research findings, yearbooks, and periodicals will be investigated and current practices in the best high schools of the country will be stressed.

(4) IV (Keffer)

244—PROBLEMS IN TEACHING PHYSICS. The purpose of this course is to take the prospective teacher over the whole field of high school physics. A series of demonstration lectures will be given supplying inspirational material. Selected experiments will be used as models for laboratory exercise. In conferences the following will be considered: Equipment and operation of the laboratory, source materials and tests, problems actually encountered by teachers in their work, etc. An outline for a workable course in high school physics will be required.

(4) IV (Koppius)

249—EXTRA CURRICULAR ACTIVITIES. Underlying principles, faculty activities, home room activities, student council, clubs, athletics, publications, dramatics, honor societies, commencements. *Prerequisite: 16 quarter hours Education.*

(4) III (Ligon)

307a-b—RESEARCH PROBLEMS IN SECONDARY EDUCATION. An independent research course. The student will confer with the instructor whenever either or both of them deem it advisable.

Prerequisite: Master's degree or equivalent.

(4) I, II, III, IV
(Ligon)

VOCATIONAL EDUCATION

211—THE ADMINISTRATION OF VOCATIONAL EDUCATION. A course designed for superintendents and principles of high schools. The purpose of the course is to train for administering and supervising vocational education. Topics emphasized include aims and purposes of vocational education, relationship of vocational to other education, financing vocational education, and relationship of local to state administration.

(4) II (Hammonds or Woods)

282—SPECIAL PROBLEMS IN VOCATIONAL EDUCATION. An independent work course for students interested in vocational education. Provision is made for the student to make individual investigations and reports on special problems.

(4) I, II, III (Woods)

PHYSICAL EDUCATION

The physical Education Department offers graduate work toward the degree of Master of Arts or the degree of Master of Arts or Master of Science in Education. Requirements for the degree of Master of Arts with a major in physical education are stated on pages 9 and 10. Requirements for the degree of Master of Arts or Master of Science in Education with a major in physical education are stated on page eleven.

115—HISTORY AND SURVEY OF THE DANCE. A study of the history and development of the various dance forms, including ballet dances, free dances, folk dances, national dances, eastern dances, American Indian dances, and a study of modern tendencies, and relation of dancing to physical education. Four hours recitation.

(4) I, II, IV (Kouns)

120a, b—KINESIOLOGY. A study of the principle types of exercise, particularly muscular and mechanical factors involved in bodily movement and function. A study of the prevention and treatment of certain physical defects and deformities through a knowledge of body mechanics. Three hours per week.

(3) I, II, III, IV (Hackensmith)

NOTE: This course meets the requirement established by graduate schools of physiotherapy.

123—HISTORY AND PRINCIPLES OF PHYSICAL EDUCATION. Study of the historical development of Physical Education, the contributions of individuals and organizational movements. An interpretation of the biological, physiological and sociological principles of physical education. Five hours recitation and lecture.

(5) II, III

125—ADMINISTRATION AND ORGANIZATION OF RECREATION. A study of policies and procedures involved in organization and administration of recreation for children, youth, and adults. Four hours per week.

(4) III, IV (Kouns)

129—PHYSICAL EDUCATION IN THE SECONDARY SCHOOL. Required of all physical education majors who wish to qualify for teacher certification as a physical education teacher on the secondary school level. Study of theory, practice and methods of teaching physical education activities and programs for secondary school age pupils. Four hours recitation and lecture

(4) I, IV

131—ADVANCED BASKETBALL. Lectures and recitations on theory and practice of team play in basketball. Special emphasis is placed on systems of offense and defense as used by the leading coaches throughout the country. Three hours per week.

(3) III, IV (Rupp)

142—ADVANCED FOOTBALL. Lectures and recitations on the theory of football. Special stress is placed on generalship, signal systems, scouting and conditioning of players. Football is studied from the coach's viewpoint. Three hours a week.

(3) II, IV (Kirwan)

149—ADMINISTRATION OF PHYSICAL EDUCATION AND ATHLETICS. Policies and procedures of administration on the secondary school and collegiate levels. Special emphasis on construction and care of facilities, equipment, and supervision of personnel. Four hours per week.

(4) I, IV

151—ORGANIZATION OF INTRAMURAL SPORTS.—A study of the history and development of intramural sports on the elementary, secondary, and college levels. Three hours per week.

(3) I, IV (Hackensmith)

200—GRADUATE SEMINAR IN PHYSICAL EDUCATION. Graduate students majoring in physical education who are engaged in writing a thesis should register for this course. Recitations, three hours a week.

(3) I, IV (Hackensmith)

201a, b—RESEARCH IN PHYSICAL EDUCATION. The theory and practice of the measurement of strength, size and maturity, power, motor educability, and agility. The use of tests in classification and achievement. Four hours per week.

(4) I, II, III, IV (Hackensmith)

202—PROBLEMS COURSE IN CONTEMPORARY MOVEMENTS IN PHYSICAL EDUCATION. A detailed study and analysis of various foreign systems and procedures in physical education and athletic activities, and present athletic and physical education trends in the United States. Recitations and lectures, four hours a week.

(4) II, IV (Potter)

203—CURRENT STUDIES IN THE ADMINISTRATION OF PHYSICAL EDUCATION. For administrative officers, directors of physical education, and leisure time activities. A study of representative programs of physical education and standards for evaluating programs. Lecture and recitation, three hours a week.

(3) II, IV (Potter)

204—CURRENT STUDIES IN THE ADMINISTRATION OF ATHLETICS. For athletic directors, supervisors, and administrative procedures for colleges, public school systems and municipal athletic leagues. Lecture and recitation, three hours a week.

(3) III, IV (Potter)

VII. ENGINEERING

Prerequisites for graduate work: Students desiring to take any of the following courses should have the prerequisites indicated in each case. Courses numbered 200 and above are offered to graduates and to such practicing engineers as may be qualified to pursue them. A thorough working knowledge of chemistry, physics and mathematics is necessary. For credit toward an advanced degree, a candidate must hold a baccalaureate degree in the division of engineering in which he is registered.

ENGINEERING GENERAL

ENGINEERING ADMINISTRATION

102—ENGINEERING ADMINISTRATION. A study of the methods, procedures, and principles involved in engineering analyses, contracts, specifications, estimates and valuations and administration of engineering projects. Lectures and recitations, four hours a week.

Prerequisite: Com. 1 or

(4) I, II, IV (Farris)

Pol. Sci. 15.

APPLIED MECHANICS

100—STRENGTH OF MATERIALS. (For Civil, Electrical, Metallurgical and Mining Engineers.) A general course in the application of the principles of mechanics to the solution of problems in stress and strain due to direct forces, shear, bending, torsion, eccentric loads and combined stresses; in beams, columns, thin cylinders, springs, etc. Lectures and recitations, five hours a week.

Prerequisite: Ap. Mech. 3

Prerequisite or Concurrent:

(5) I, II, III, IV

Math. 20b.

(Hawkins, Backer)

104—STRENGTH OF MATERIALS. (For Mechanical Engineers.) Theory of stress and strain in engineering materials, due to direct forces, bending, torsion, eccentric loads and combined stresses. Deflection of beams. Lectures and recitations, five hours a week.

Prerequisite: Ap. Mech. 3.

(5) Hawkins, Backer)

Prerequisite: or Concurrent Math. 20b

NOTE: Credit will not be allowed for both Applied Mechanics 100 and 104.

106—ADVANCED STRENGTH OF MATERIALS. Unsymmetrical bending of beams, bending and deflection of thin plates, stress of analysis of thick walled cylinders, and rotating discs.

Theory of elastic energy and curved beams, stress concentration and fatigue, lecture and recitation four hours a week.

Prerequisite or concurrent:

Math. 105a. (5) III, IV (Hawkins, Backer)

107—MECHANICAL VIBRATIONS. Vibrations of systems of one and several degrees of freedom, balancing of rotating machines, critical speeds, torsional and lateral vibrations of shafts. Lectures and recitations, five hours a week.

Prerequisites: Math. 105a, Ap. (5) (Hawkins)

Mech. 4 and either Ap. Mech. 100 or 104.

ENGINEERING DRAWING

115—PHOTOGRAPHY. Fundamental principles of photography. Lectures on the optics and chemistry of photography together with practical demonstrations. Negative making, printing, etc. Lecture, one hour; recitation, one hour; laboratory, two hours a week.

Prerequisites: Chem. 1a. (4) II, III (Nollau)

Phys. 3a.

CIVIL ENGINEERING

102—REINFORCED CONCRETE. A study of concrete mixtures. Theory and design of beams, slabs, columns, bridges and buildings; lecture and recitation four hours a week

(4) II (Terrell)

104—REINFORCED CONCRETE DESIGN. Design of columns, beams, buildings, bridges, retaining walls, dams and arches. Special problems assigned to each student. Drawing room, two hours a week.

Concurrent: C. E. 102.

(1) II (Terrell)

105—MASONRY STRUCTURES. Theory and design of retaining walls, dams, arches, plane and reinforced structures, rigid frames. Lectures and recitation, three hours; drawing room, four hours a week.

Prerequisite: Civ. Eng. 171a.

(5) III; (Terrell)

106—FOUNDATIONS AND TUNNELLING. A study of foundation material and its relation to the structure. Principles of tunneling as related to transportation and structures. Lecture and recitation, two hours a week.

Prerequisite: Appl. Mech. 100.

(2) III (Graham, Terrell)

107—SOIL MECHANICS. A study of soil and its utilization in foundations for structures and as subgrade for highways. Stabilization and improvement of bearing values. Lecture and recitation, two hours, laboratory 3 hours a week.

Prerequisite: Appl. Mech. 100.

(3) III (Shaver)

113—GEODESY, PRECISE SURVEYING AND LEVELING. Method of making and adjusting observations in triangulation systems, and precise traverses. Observation and calculations for determining time, azimuth, latitude and longitude. Lecture and recitation three hours a week; field work, three hours a week.
Prerequisites: Math. 11, 12; *C. E.* 13. (4) I (Terrell)

120—HYDRAULICS. Principles of hydraulics and hydrodynamic pressure. Flow of water through orifices, nozzles, pipes and open channels, over weirs, against stationary and moving vanes. Loss from friction and other sources. Lectures and recitation, three hours a week.
Prerequisite: Phys. 3a. (3) I, II, III, IV (Cheek)
Prerequisite or Concurrent: Math. 20b.

122—WATER POWER ENGINEERING. Investigations, design and operation of water power projects. Lecture and recitation three hours a week.
Prerequisite: C. E. 120. (3) III (Carrell)

123—HYDRAULICS LABORATORY. Experimental investigation of flow of water in pipes, channels and over weirs; measure of friction and hydraulic pressure; hydraulic machinery. Laboratory, four hours a week.
Prerequisite or Concurrent:
C. E. 120. (2) I, II, III, IV (Cheek)

170—ELEMENTS OF STRUCTURAL DESIGN. Drafting room practice, problems in the design of timber, steel and masonry structures. Lectures, one hour; drafting room, nine hours a week.
Prerequisite or Concurrent (4) I, II, III (Carrel)
C. E. 171a.

171a—THEORY OF STRUCTURES. Laws of statics, wind, impact, live and dead load, reactions, shear moments and influence lines. Methods of design, including beams, girders, columns and various types of trusses. Lectures and recitations, five hours a week.
Prerequisite or Concurrent: (5) I, II, III (Carrel)
Applied Mech. 100.

171b—THEORY OF STRUCTURES. Continuation of *Civ. Eng.* 171a. Lectures and recitations three hours a week.
Prerequisite: Civ. Eng. 171a. (3) (Carrel)

173a—STEEL STRUCTURES. Design and detail of steel buildings and highway bridges. Lecture, one hour; drawing room, nine hours a week.
Prerequisite: C. E. 171a. (4) I, II, III (Carrel)

173b—STEEL STRUCTURES. Design and detail of steel railway bridges. Drawing room, nine hours a week.

Prerequisite: C. E. 173a. (3) II (Carrel)

181a—INDEPENDENT PROBLEMS. A complete solution with the necessary details, plans and specifications of a problem, selected by the student with the approval of the instructor, in one of the following fields:

(a) Reinforced concrete design, (b) Concrete research, (c) Structural steel, (d) Hydraulics, (e) Sanitary engineering, (f) Highway and railway engineering (g) Geodetic surveying.

Conference, laboratory or drawing room, three hours a week.
Prerequisite: Student must show (1) II (Terrell and others) that he is qualified to undertake the proposed problem.

181b—INDEPENDENT PROBLEMS. Continuation of 181a. Seven hours a week conference, laboratory or drawing room.

Prerequisite: C. E. 181a. (3) III (Terrell and others)

202a—CONSTRUCTION. Advanced work in plain and reinforced concrete, theory, design and experimental work. Class work, three hours; laboratory, nine hours a week.

(10) I (Terrell)

202b—CONSTRUCTION. Continuation of 202a.

(10) II (Terrell)

232a—HIGHWAY ENGINEERING. Advanced course designed for graduate civil engineers who wish to enter the field of highway engineering. Road laws, organization of highway departments, traffic, cost, contracts and specifications, laboratory investigations on all kinds of surfacing materials. Structures, their design and maintenance. Class work, five hours; laboratory, ten hours a week.

(10) I (Chambers)

232b—HIGHWAY ENGINEERING. Continuation of 232a.

(6) (Chambers)

242a—RAILROAD ENGINEERING. Advanced course in location, construction, maintenance, economical selection of lines, grade reduction, cost of operation, valuation, structures and their maintenance. Class work, five hours; laboratory, ten hours a week.

(10) II (Shaver)

242b—RAILROAD ENGINEERING. Continuation of 242a.

(10) III (Shaver)

262a—GEODETIC SURVEYING. Advanced course in geodetic calculations, development and use of formulas used by the United

States Coast and Geodetic Survey. Modern methods of field practice. Class work, five hours; laboratory, ten hours a week.

(10) III (Terrell)

262b—GEODETIC SURVEYING. Continuation of 262a.

(10) IV (Terrell)

272a—STRUCTURAL ENGINEERING. Advanced course in theory of structures, mill buildings, railroad and highway bridges. The use of influence diagrams and detail drawings. Class work, five hours; laboratory, ten hours a week.

(10) II (Carrel)

272b—STRUCTURAL ENGINEERING. Continuation of 272a

(10) III (Carrel)

SANITARY ENGINEERING

151—WATER SUPPLY AND WATER WORKS. Sources of supply: rainfall, surface water, rivers, lakes and ground water. Theory of filtration, purification, equipment and distribution. Problems in design and construction. Lecture and recitation three hours a week.

Prerequisite: C. E. 120.

(3) II (Cheek)

152—SEWERS AND SEWAGE DISPOSAL. Sanitary and storm sewer systems; theory of design; method of disposal. Lecture and recitation three hours a week.

Prerequisite: C. E. 120.

(3) II (Cheek)

153—DESIGN OF WATER WORKS AND SEWERS. Design of water supply system, storm and sanitary sewers and disposal plants. Specifications and estimates of cost. Drawing room, six hours a week.

Prerequisite of concurrent:

(2) III (Cheek)

S. E. 151, 152.

156—WATER AND SEWER PLANT OPERATIONS. Standard methods of control for producing best results in the treatment of water and sewage. Practice with miniature plants. Laboratory, four hours a week.

Prerequisite or concurrent:

(2) III (Cheek)

S. E. 151, 152.

157—SANITARY ENGINEERING FOR HEALTH OFFICERS. General principles of sanitary engineering including municipal and rural sanitation, water supply, collection of waste, sewers and sewage disposal, insect control, milk sanitation, principals of heating, lighting and ventilation. Eight hours a week for eight weeks. Lectures, recitations, field trips.

(2) IV (Cheek)

158—SANITARY ENGINEERING DESIGN. For students majoring in Sanitary Engineering. Complete design and layout of a water plant, distribution system, storm and sanitary sewer and sewage disposal plant. Drawing room, twelve hours a week.

Prerequisite or Concurrent: (4) III (Cheek)

San. Eng. 151, 152.

182—SANITATION. Presented from an engineering view point. Municipal and rural sanitation, treatment and protection of water supplies, disposal of refuse and sewage, control of insects, food supply, plumbing and ventilation. Recitation, three hours a week.

Prerequisite: *Bact.* 57. (3) III (Cheek)

252a—SANITARY ENGINEERING. Advanced course in sewer design, construction and maintenance. Design, maintenance and operation of sewage disposal plants. Water supply and water works design, construction and maintenance. (Courses in water analysis and bacteriology should be taken in connection with this course.) Class work, five hours; laboratory, ten hours a week.

(10) III (Cheek)

252b—SANITARY ENGINEERING. Continuation of 252a.

(10) III (Cheek)

ELECTRICAL ENGINEERING

101—FUNDAMENTALS OF ELECTRICAL MACHINERY (For Civil, Metallurgical and Mining Engineers). A study of the more common types of d. c. and a. c. electrical equipment and machinery. Recitation, three hours a week; laboratory, three hours a week.

Prerequisite: *Physics* 3b. (4) I, III (Bureau)

102—ELECTRICAL MACHINERY (For Metallurgical and Mining Engineers). A study of electric power and its control as applied to mining machinery and metallurgical processes. Recitation three hours a week.

Prerequisite: *E. E.* 101. (3) II (Bureau)

105—D. C. CIRCUITS AND MACHINERY. (For Mechanical Engineers and Industrial Chemists). Subjects studied are batteries, d.c. generators, motors, control apparatus, power transmission, etc. Recitation, 4 hours; laboratory, 6 hours.

Prerequisite: *Phys.* 3b. (6) III (Barnett)

106—A. C. CURRENTS AND MACHINERY (For Mechanical Engineers and Industrial Chemists). The fundamental theory of alternating current circuits and apparatus. Includes study of single phase and polyphase generators, motors, transformers, converters, etc. Recitation, four hours; laboratory, six hours a week.

Prerequisite: *E. E.* 105; (6) I, IV (Barnett)

Math. 20b.

107—ELECTRICAL CONTROL. A study of the field of electrical engineering which is concerned with the control of motive equipment. It involves a study of the individual types of contractors, relays, etc., as well as the various circuits with which they are tied together into units for automatic functioning equipment. Recitation, two hours; laboratory, two hours a week.

Prerequisite or Concurrent: (4) IV (Bureau)
E. E. 106, 116 or 101.

108—ELECTRONIC CONTROLS. A study of the application of thermionic and light sensitive tubes to industry in non-communication uses such as the controlling of manufacturing processes and motive equipment, safe-guarding life and property, etc. Recitations, 3 hours; laboratory, 3 hours.

Prerequisite: *Phys. 114,* (4) II (Bureau)
Elec. Eng. 116, 106 or 101

110a—ELECTRICAL LABORATORY (For Electrical Engineers). An experimental study of electrical machines. Two three-hour laboratory periods a week.

Prerequisite or Concurrent: *Elec. Eng.* (1) II (Barnett)

110b—ELECTRICAL LABORATORY. A continuation of Elec. Eng. 110a. Laboratory, 2 hours.

Concurrent: *Elec. Eng. 116* (1) IV (Barnett)

110c—ELECTRICAL LABORATORY. A continuation of Elec. Eng. 110b. Laboratory 2 hours

(1) IV (Barnett)

111a—ADVANCED ELECTRICAL LABORATORY. Advanced study of electrical machinery with special reference to alternating current apparatus. Laboratory, two two-hour periods a week.

Concurrent B. E. 117. (2) I (Bureau)

111b—ADVANCED ELECTRICAL LABORATORY. Continuation of E. E. 111a. Laboratory, three hours a week.

(1) II (Bureau)

111c—ADVANCED ELECTRICAL LABORATORY. A continuation of Elec. Eng. 111b. Laboratory, 3 hours.

(1) III (Bureau)

114—ALTERNATING CURRENT CIRCUIT ANALYSIS. (For Electrical Engineers). A study of the application of vector algebra, Fourier series and symmetrical components to the analysis and solution of single and polyphase, balanced and unbalanced circuits having sinusoidal and non-sinusoidal currents and voltages. Recitation, 5 hours.

Prerequisites: *Elec. Eng. 21,* (5) II (Bureau)
Math. 105a.

115—DIRECT CURRENT MACHINERY. (For Electrical Engineers). A study of D. C. machinery operation and behavior. Recitation, 3 hours, calculating room and laboratory, 3 hours.
Prerequisite: Elec. Eng. 21, (4) II (Staff)
Math. 20b

116—ALTERNATING CURRENT MACHINERY. (For Electrical Engineers). A study of A. C. machinery operation and behavior. Recitation, 4 hours, calculating room and laboratory, 3 hours.
Prerequisite: Elec. Eng. 115 (5) III (Staff)

117—ADVANCED ALTERNATING CURRENT MACHINERY. (For Electrical Engineers). Advanced analytical study of A. C. machinery characteristics. Recitation, 5 hours.
Prerequisite: Elec. Eng. 116. (5) IV (Staff)

123—ELECTRICAL EQUIPMENT PROBLEMS. (For Electrical Engineers). Individual problems related to engineering practice are assigned. The solutions involve economic as well as engineering considerations. A formal written report is required for each assignment. 9 hours.
Prerequisites: Elec. Eng. 116, Math. 105a (3) I (Barnett)

124a—ELECTRICAL DESIGN. D. C. machinery design. 6 hours.
Prerequisite: Elec. Eng. 115 (2) II (Bureau, Barnett)

124b—ELECTRICAL DESIGN. A. C. Machinery design. 6 hours.
Prerequisite: Elec. Eng. 116 (2) III (Bureau, Barnett)

131a—ELECTRICAL COMMUNICATION ENGINEERING. A study of the fundamentals of wire communication. Special emphasis is placed upon a thorough treatment of the theory or networks, transmission lines, wave filters, etc. Lecture and recitation, four hours, problem work and laboratory, three hours a week.
Prerequisite: Phys. 114, (5) I (Doll, Bureau)
Math. 105a, E. E. 114, E. E. 116

131b—ELECTRICAL COMMUNICATION ENGINEERING. A continuation of Electrical Engineering 131a, with special emphasis on the application of electron tubes to telephony, telegraphy and radio. Lecture and recitation, three hours, problem work and laboratory, three hours a week.
Prerequisite: E. E. 131a. (4) II (Doll, Bureau)

131c—ELECTRICAL COMMUNICATION ENGINEERING. Telephone engineering. Study of modern telephone practice in line and switchboard design and operation. Recitation, 4 hours.
Prerequisite: Elec. Eng. 131b (4) III (Doll)

136—ILLUMINATION ENGINEERING. Includes a study of light sources and photometry; fundamental principles of illumination as applied to home, public building, factory and commercial lighting; outdoor lighting. Recitations, three hours; laboratory, three hours a week.

Prerequisites: Phys. 3b,
Math. 20b.

(4) III (Bureau)

137—ELECTRIC POWER TRANSMISSION AND DISTRIBUTION. A study of the materials and equipment used and the problems involved in the design, building and operation of transmission lines and distribution systems. Recitations, four hours a week.

Prerequisite: Elec. Eng. 106 or 101, 116.

(4) II (Barnett)

151a—SEMINAR. Weekly meeting with the staff for reports and discussion of research and modern trends and practices in electrical engineering. Two hours a week.

Prerequisite: Senior classification.

(1) II (Staff)

151b—SEMINAR. Continuation of Elec. Eng. 151a. Two hours a week.

(1) III (Staff)

151c—SEMINAR. A continuation of Elec. Eng. 151b. 2 hours.

(1) IV (Doll, Bureau)

152a, b, c.—INDEPENDENT PROBLEMS. (For Electrical Engineers). A problem, approved by the Head of the Department, forms the background for study and research. Only students, the character of whose previous work justifies it, will be allowed to register for this work.

(2) II, III, IV (Staff)

152d, e, f.—INDEPENDENT PROBLEMS. (For Electrical Engineers). A problem, approved by the Head of the Department, forms the background for study and research. Only students, the character of whose previous work justifies it, will be allowed to register for this work.

(3) II, III, IV (Staff)

205—ADVANCED INDUCTION MOTOR THEORY. A study of the theory underlying the characteristics of single phase and poly-phase induction motors. Recitation, four hours; laboratory, six hours a week.

(6) (Bureau)

206—ELECTRIC POWER TRANSMISSION. The theory underlying calculation and operation of long distance transmission circuits. Special attention to relay control. Recitation, four hours; laboratory, Six hours a week

(6) (Barnett)

207—ELECTRIC POWER DISTRIBUTION. A study of theory underlying operation and control of various types of distribution circuits. Recitation, four hours; laboratory, six hours a week.
(6) (Barnett)

208—ELECTRIC TRACTION. An advanced study of electric power application to railways, cranes, elevators, etc. Recitation four hours; drawing room, six hours a week
(6) (Bureau)

209—TELEPHONE ENGINEERING. An advanced study of the theory and operation of modern telephone exchanges. Layout and design are made to meet different conditions. Recitation, four hours; laboratory and design, six hours a week.
(4)

210—SYMMETRICAL COMPONENTS. A study of the symmetrical component method of analyzing unbalanced conditions on transmission lines and its use in solving relay applications. Recitation, four hours; laboratory and design, six hours a week.
(6) (Bureau)

MECHANICAL ENGINEERING

100a—MACHINE DESIGN (For Mechanical Engineers). Design of machine and structural elements. Lecture, one hour; drawing room, eleven hours a week.
Prerequisites: Eng. Draw. 12, Mech. Eng. 15a.
Prerequisite or Concurrent:
Applied Mech. 100 or 104.
(4) I, IV (Jett, Walton)

100b—MACHINE DESIGN (For Mechanical Engineers). Continuation of Mech. Eng. 100. Individual work on the design and construction of complete machines or structures. Lecture, one hour; drawing room, eleven hours a week.
(4) I, II (Jett, Walton)

101—MECHANICAL ENGINEERING DESIGN. Individual work in the selection of equipment and in the laying out and specifying of power plant, heating, ventilating, air conditioning, plumbing, electric industrial and elevator equipment for buildings. Drawing room, twelve hours a week.
Prerequisites: Mech. Eng. 104b.
Applied Mech. 100 or 104
Prerequisite or Concurrent:
M. E. 105, 106b, 107, 109.
(4) I, II (West, May)

103—ELEMENTS OF HEAT-POWER ENGINEERING (Intended for civil and mining engineers). Brief general course in heat-power engineering, including elementary principles of thermodynamics and power plant equipment. Recitation, two hours a week.
Prerequisite: Physics 3a.
(2) I (May)

104a—ENGINEERING THERMODYNAMICS. Covering the fundamental principles of thermodynamics, Carnot cycles, entropy and enthalpy. A study of the thermodynamic equations for gases and vapors, steam power plant cycles, reciprocating engines and turbines, reheating and regenerative cycles. Recitation four hours a week.

Prerequisites: Phys. 3a.

(4) I, II (Walton)

Prerequisite or Concurrent: Math. 20b.

104b—ENGINEERING THERMODYNAMICS. A continuation of Mech. Eng. 104a. Recitation, 3 hours a week.

(3) I, II (Walton)

105—STEAM POWER PLANT EQUIPMENT. Study of the characteristics and use of steam power plant equipment, including steam generators, fuel handling and burning equipment, coal, and ash handling, draft producers, dust collectors, smoke abatement, prime movers, generators, air preheaters, economizers, feed water heating and treatment, pumps, continuous blow down and combustion control. Recitation four hours a week.

Prerequisite: Mech. Eng. 104b.

(4) I, IV (West)

106a—HEATING, VENTILATING AND AIR CONDITIONING. Fundamental heating and ventilating calculations with a study of the characteristics of various types of heating and ventilating equipment. Recitation five hours a week.

Prerequisite: Mech. Eng. 104b.

(5) I, II (May)

106b—HEATING, VENTILATING AND AIR CONDITIONING. A continuation of Mech. Eng. 106a. Special emphasis on the physics and thermodynamics of air conditioning and the design, selection, laying out and specifying of air conditioning equipment. Recitation three hours a week.

Prerequisite: Mech. Eng. 106a.

(3) II, IV (May)

107—FLUID MECHANICS. Covering the statics, Kinematics, dynamics and thermodynamics of fluids, both liquids and gases, including the derivation and use of all fundamental formula for flow through orifices, nozzles, pipes, fittings, etc., together with the study of dams, weirs, metering devices, turbines, pumps, the aerodynamics of bodies moving through air and the hydrodynamics of bodies moving through water. Recitation, 4 hours per week.

Prerequisite: Mech. Eng. 104a

(4) IV (West, Walton)

108—INTERNAL COMBUSTION ENGINES. A study of internal combustion engine cycles and the characteristics and performance of actual engines, valves, gears and materials of construction. Recitation. Five hours a week.

Prerequisite: M. E. 104b.

(5) II (Meyer)

109—REFRIGERATION. A study of the thermodynamics of refrigeration cycles, and the characteristics of refrigeration equipment. Recitation five hours a week.

Prerequisite: M. E. 104b.

(5) I, II (May)

110—HEATING AND VENTILATING DESIGN. Brief course for architectural engineers, covering the selection and layout of heating and ventilating equipment. Drawing room six hours a week.

Prerequisite or concurrent:

(2) II (May)

M. E. 116.

111—ENGINEERING REPORTS. A study of the purpose, form and use of engineering reports, together with the construction of charts and tables for the presentation of data therein and the drafting of the salient conclusions therefrom. Also the study of financial reports, contract forms and specifications. Recitation three hours a week.

Prerequisite: M. E. 112.

(3) I, IV (West)

112a—MECHANICAL LABORATORY. Practice in the operation, use, calibration and care of mechanical and industrial test and research instruments and apparatus, followed by a study of the methods used for the determination of certain fundamental coefficients and constants; also a study of the records and results from operating and test instruments in actual commercial use. Lecture one hour; laboratory three hours a week.

Concurrent: Mech. Eng. 104a

(2) I, III (Walton)

112b—MECHANICAL LABORATORY. A continuation of Mech. Eng. 112a. Lecture, 1 hour; laboratory, 3 hours a week.

(2) II, IV (Walton)

113a—MECHANICAL LABORATORY. Performance tests on heating, ventilating and power plant equipment. Lecture one hour; laboratory three hours a week.

Prerequisite or concurrent:

(2) I, IV (West)

M. E. 105, 106a, 107.

113b—MECHANICAL LABORATORY. A continuation of Mech. Eng. 113a. Lecture, 1 hour; laboratory, 3 hours a week.

(2) I, II (West)

116—ELEMENTARY HEATING, VENTILATING AND AIR CONDITIONING. A course involving elementary heating and ventilating, calculations and descriptions of various types of equipment. Latter part of quarter devoted to a discussion of the basic principles of air conditioning. Recitation four hours a week.

Prerequisites: Phys. 3a or 10,

Junior classification.

(3) II (May)

120—INDEPENDENT PROBLEMS. This comprises the complete design and possibly the construction of a machine or an apparatus or the complete design and specification for a power plant, heating, ventilating and air conditioning system or industrial shop, including the management and direction of underclass assistants who will be then assigned such work as required; together with the estimating of the costs and time required to perform the work. Lectures and laboratory fourteen hours a week.

Prerequisite: Senior classification. (5) II, III (West and others)

121—MACHINE DESIGN. (For Electrical Engineers.) Similar to Mech. Eng. 100a with special attention to the mechanical features of electrical machines. Lecture one hour; drafting room eight hours a week.

Prerequisite: Eng. Draw. 18, Mech. Eng. 15a;

Prerequisite or Concurrent: (3) I, IV (Jett)

Applied Mech. 100 or 104.

122a—MECHANICAL ENGINEERING SEMINAR. Studies of current engineering literature and problems; presentation of papers and discussions. All presentation to be electrically recorded and reproduced and at least one record of each student to be placed on file. Two hours a week.

Prerequisite: Senior

classification. (1) I, IV (West, May and others)

122b—MECHANICAL ENGINEERING SEMINAR. Continuation of Mech. Eng. 122a. Two hours a week.

Prerequisite: Senior

classification. (1) I, II (West, May and others)

122c—MECHANICAL ENGINEERING SEMINAR. A continuation of Mech. Eng. 122b. Two hours a week.

(1) II, III (West, May and others)

201a—AUTOMOTIVE ENGINEERING. An advanced course in the essentials of motor vehicle design, construction and operation. Drafting room, laboratory and lectures by appointment.

(9) (Meyer)

201b—AUTOMOTIVE ENGINEERING. Continuation of 201a.

(9) (Meyer)

202a—POWER PLANT ENGINEERING. Advanced work in the design, selection, layout and operation of heat-power plant equipment.

(9) (West)

202b—POWER PLANT ENGINEERING. Continuation of 202a.

(9) (West)

203a—HEATING, VENTILATING AND AIR CONDITIONING. Advanced work in the design, selection, layout and operation of heating, ventilating and air conditioning equipment

(9) (May)

203b—HEATING, VENTILATING AND AIR CONDITIONING. Continuation of 203a.

(9) (May)

204a—ADVANCED MACHINE DESIGN. The application of the principles of mechanics of materials, dynamics and kinematics to the design of complete machines. This involves a knowledge of shop practice and methods of construction.

(9) (Jett, Meyer)

204b—ADVANCED MACHINE DESIGN. Continuation of 204a

(9) (Jett, Meyer)

METALLURGICAL ENGINEERING

120—ASSAYING. This course comprises the determination of the constituents of ores and metallurgical products by means of fire methods, primary attention being given to the determination of the precious metals. Laboratory six hours a week.

Prerequisites: Chem. 8b, Met. 27.

(2) (Beebe)

121—FUEL AND METALLURGICAL LABORATORY. This course comprises the analytical determination of the constituents of ores and metallurgical products by both wet and dry methods as well as the determinative methods utilized in the analysis of coals and other fuels. Laboratory six hours a week.

Prerequisites: Chem. 8b, Met. 27.

(2) III (Beebe)

128—METALLURGY OF NON-FERROUS METALS. This course comprises a study of the principles and processes employed in the production and preparation for use of copper, lead, aluminum and other non-ferrous metals such as gold, silver, zinc, etc., and of their respective alloys. Lectures and recitations four hours a week.

Prerequisite: Met. 27.

(4) II (Crouse)

132a—METALLURGICAL CALCULATIONS. This course comprises a study of the calculations involved in the practical application of the principles of general metallurgy, as well as those used in both ferrous and non-ferrous metallurgical practice. Recitation and problems, four hours a week.

Prerequisites: Chem. 8; Met. 29 and 128.

(4) II (Crouse)

132b—METALLURGICAL CALCULATIONS. A continuation of Met. Eng. 132a. Recitation and problems, 4 hours a week.

(4) III (Crouse)

140—THE SCIENCE OF METALS. This is a first course in physical metallurgy and involves a consideration of the correlation of the structure of metals and alloys to their physical properties together with the effects of mechanical work and heat. Lectures and recitations, four hours a week

Prerequisites: Physics 3c; Chem. 8b; (4) I, II (Crouse)
Met. 29.

141—ALLOY STEELS. The thermal behavior of low and high alloy steels is discussed on the basis of each particular phase diagram. The sub-critical transformation of austenite in alloy steels and the physical properties of the products of this type of decomposition of austenite are reviewed. Martensite and intermediate transformations are treated. The heat treatment of complex alloy steels such as the high speed and high alloy die steels receive particular emphasis. Lectures and recitation, 3 hours a week.

Prerequisite: Met. 36 or Met. 140. (3) III (McGuire)

142a—HEAT TREATMENT. This course comprises a study of the methods used and the principles involved in the heat treatment of metals and alloys. Lectures and recitation, two hours a week; laboratory three hours a week.

Prerequisites: Met. 29, Met. 60. (3) I (Crouse)

142b—HEAT TREATMENT. A continuation of Met. 142a. Lectures and recitation, 2 hours; laboratory, 3 hours a week.

(3) II (Crouse)

143a—PHYSICS OF METALS. The study of the laws governing the formation of alloys. Subjects discussed are atomic structures of metals and alloys, atomic forces, superlattices, ferro-magnetism, perfect and imperfect crystals, corrosion, superconductivity, the physical properties of metals as a function of periodic and electrochemical position, diffusion, free energy, Hume-Rothery and other rules. In addition the course entails the application in the X-ray Laboratory of the work taken in the class room together with the development of an operating technique in radiography as applied to metals and alloys. Lectures and recitation, three hours a week, laboratory three hours a week.

Prerequisites: Phys. 119, 123b, Met. 140. (4) I (McGuire)

143b—PHYSICS OF METALS. A continuation of Met. 143a. Lectures and recitation, 3 hours; laboratory, 3 hours a week.

(4) II (McGuire)

144—NON-FERROUS METALLOGRAPHY. The physical properties of the non-ferrous metals and the interpretation of the properties obtained on the basis of the phase diagram is the prime objective of this course. The light alloys and the age hardening theory are

emphasized. Bearing metals and the bronzes receive special attention. Lectures and recitation, 2 hours; laboratory, 3 hours a week. *Prerequisite: Met. 140.* (3) III (McGuire)

150—INDUSTRIAL MINERAL PREPARATION AND USES. This course comprises a study of the more common non-metallic substances utilized in industry such as carbon, lime, clay, nitrogen, etc. Lectures and recitation, three hours a week. *Prerequisite: Met. 27.* (3) III (Beebe)

164—ELEMENTS OF LOW TEMPERATURE CARBONIZATION. An elementary course in the study of the principle involved in the low temperature carbonization of coals and other carbonaceous materials, including hydrogenation. Lectures and recitation three hours a week, with assigned reference reading. *Prerequisites: Phy. 123b, Chem. 131c.* (3) (Crouse)

166a—EXTRACTIVE METALLURGY. Study of the principles and mechanisms applied to the practices of gravity concentration, flotation, and related processes, in the preparation of mine products for market, including discussion of the principles of plant design, with reference to reading planned to keep the student informed of current technological development. Recitation and lectures, five hours a week, with reference readings and problems. *Prerequisites: Chem. 1b, Phys. 3b, Math, 20a, Met. 27.* (5) I (Emrath)

166b—EXTRACTIVE METALLURGY. Continuation of Metallurgy 166a. Recitation and lectures four hours a week, with reference reading and problems. (4) II (Emrath)

167—EXTRACTIVE METALLURGY PLANT PRACTICE. This is a course in the operation of plants studied in Metallurgy 166a, 166b. Laboratory forty-four hours a week for two weeks. (2) III (Emrath)

175a—SEMINAR. This course includes general round table discussions of various metallurgical principles and problems, the preparation and delivery of papers and reports on metallurgical subjects, extemporaneous speaking and the briefing of technical books and articles in the current literature. Two hours a week. *Prerequisite: Nine quarters in Metallurgical Eng.* (1) I (Staff)

175b—SEMINAR. A continuation of Metallurgy 175a. Two hours a week. *Prerequisite: Senior classification.* (1) II (Staff)

175c—SEMINAR. A continuation of Metallurgy 175b, 2 hours a week. (1) III (Staff)

205—HEAT TREATMENT OF METALS AND ALLOYS. This is an advanced course in which the various factors involved in the heat treatment of metals and alloys are considered with special emphasis upon the particular metal or alloy on which the student wishes to specialize. Reference reading and laboratory work are emphasized. Lectures and recitations three hours a week; laboratory twelve hours a week. (9) (Crouse)

207—TECHNOLOGY OF ALLOYS. This course comprises a study of the principles and practices used in the production of alloys of various kinds with special stress upon any particular group of alloys that the student may choose. Reference reading and laboratory work are emphasized. Lectures and recitations three hours a week; laboratory twelve hours a week. (9) (Crouse)

208—ADVANCED METALLOGRAPHY. This course comprises a detailed study of the structure of metals and alloys together with their preparation for study under the microscope. In addition instruction is given in the taking of microphotographs. Reference reading and laboratory work are emphasized. Lectures and recitation three hours a week; laboratory twelve hours a week. (9) (Crouse)

209—ADVANCED ORE DRESSING. This course comprises a study of the technique of ore dressing, plant design and gives an opportunity for original research in concentration problems. Lectures and recitations three hours a week; laboratory twelve hours a week. (9) (Emrath)

210—TECHNOLOGY OF LOW TEMPERATURE CARBONIZATION. This course comprises a detailed study of the principles and practices employed in the low temperature carbonization of carbonaceous materials such as bituminous and cannel coals. Reference reading and laboratory work are emphasized. Lectures and recitations three hours a week; laboratory twelve hours a week. (9) (Crouse)

*Prerequisite: Sufficient background in
Physics, Chemistry and Metallurgy,
this background to be determined by
the Head of the Department after
consultation with the student.*

211—ELEMENTS OF OIL SHALE ENGINEERING. This course comprises an elementary study of the destructive distillation of oil shales for the production of oil, gas and by-products together with the history of the oil shale industry and the economic factors upon which the future development of the industry depends. Lectures and recitations three hours a week. (3) (Crouse)

*Prerequisite: A sufficient background of
Physics, Chemistry and Geology*

212—OIL SHALE TECHNOLOGY. This course involves a detailed study of the principles employed and the methods used in the production of oil from shale. Reference reading and laboratory work are emphasized. It is desirable that the student have some knowledge of physical and organic chemistry. Lectures and recitations three hours a week; laboratory twelve hours a week.

Prerequisites: Sufficient background in (9) (Crouse)
Chemistry and Physics.

213—X-RAY METALLOGRAPHY. Radiography of castings and welds. The atomic structure of metals and alloys will be determined. Laue, Debye, focusing, rotating crystal, Phragmen and Sacks type diffraction cameras will be studied; also stereographic and gonomonic projection, pole figures, fibre patterns, crystal structure and Cohen's analytical method of calculating lattice parameters. Radiographs will be made and interpreted. Lectures and recitations three hours, laboratory six hours a week.

Prerequisite: Met. 143b. (6) (McGuire)

214—THE METALLIC STATE. Fibre patterns, stereographic projection and goniometry. Crystal chemistry and metallic crystals. Quantum mechanical concepts for isolated atoms are applied to interacting atoms, leading to methods of calculating energies and forces binding atoms together in crystals. Lectures and recitations, three hours a week.

Prerequisite: Met. 143b. (3) (McGuire)

230a-b-c-d—RESEARCH IN X-RAY METALLOGRAPHY. Research problems in X-Ray metallography either diffraction or radiographic. Lectures and recitation, 2 hours a week; laboratory 12 hours a week.

Prerequisite or Concurrent: Met. 213. (9) (McGuire)

MINING ENGINEERING

126a—DEVELOPMENT OF MINES. Includes study of the origin of mineral deposits in general, as they concern the engineering procedures involved in the location and exploration of mineral deposits and of the engineering processes involved in the development of prospects into mines. Recitations four hours a week; reference reading and assigned reports.

Prerequisites: Chem. 2b, Phys. 3b, Geol. 12b. (5) III (Emrath)

126b—DEVELOPMENT OF MINES. Continuation of Mining 126a. Recitations three hours a week, with assigned reference reading and reports.

Prerequisite: Min. 126a. (3) IV (Emrath)

127a—MINING UNDERGROUND. Includes a study of methods of excavation and support, and underground working and develop-

ment faces in all types of underground mining operations. Recitations and lectures four hours a week with assigned reference reading.

Prerequisite: Min. 126a.

4 II (Emrath)

127b—MINING UNDERGROUND. Continuation of Mining 127a. Recitations and lectures three hours a week with assigned reference reading.

Prerequisite: Min. 127a.

(3) III (Emrath)

128—MINING AT THE SURFACE. Study of the methods of working placer deposits, open-pit mines, and similar surfacial mining operations. Lectures and recitations three hours a week with assigned reference reading.

Prerequisite: Min. 126a.

(3) II (Emrath)

129a—MINE VENTILATION AND DRAINAGE. Includes study of the principles applied to the conditioning of underground mine atmospheres, the drainage of underground mine workings and the problems encountered in the handling of emergencies, such as fires and floods in underground working. Recitations and lectures four hours a week.

Prerequisite: Min. 126a.

(4) I (Emrath)

129b—MINE VENTILATION AND DRAINAGE. Continuation of Mining 129a. Recitations and assigned reference reading three hours a week.

Prerequisites: Min. 129a.

(3) II (Emrath)

130—MINE ADMINISTRATION. A study of the engineering aspects of mine administration and management, of the technology and mechanization studies of mining and market preparation processes, and practice in the fundamentals of mine plant design. Recitations and lectures with assigned reference reading five hours a week.

Prerequisite: Min. 126a, Min. 126b.

(5) III (Emrath)

160—MINE SURVEYING AND FIELD PRACTICE IN MINING ENGINEERING. This is a summer course and consists of problems in mine surveying and the practical application of mining principles in the field. The problems given may vary from year to year according to circumstances and the particular field of interest of the student. One summer course is required and more may be taken. Field work forty-four hours a week for six weeks.

Prerequisite: Six quarters in Mining Eng.

(10) IV (Emrath)

175a—SEMINAR. This course includes general round table discussions of various mining principles and problems, the prepara-

tion and delivery of papers and reports on mining subjects, extemporaneous speaking and the briefing of technical books and articles in the current literature. Two hours a week.

Prerequisite: Nine quarters in Mining Eng. (1) I (Staff)

175b—SEMINAR. A continuation of Mining 175a. Two hours a week.

(1) II (Staff)

175c—SEMINAR. A continuation of Mining 175b. 2 hours a week.

(1) III (Staff)

203—MINE ORGANIZATION. This course comprises a detailed study of the structure and function of a mining enterprise from both the financial and the engineering standpoints. Lectures and recitations five hours a week.

(5) (Emrath)

206—EXPLOSIVE ENGINEERING. This course comprises a study of the principles involved in the use of explosives in large scale mining and quarrying practice. Lectures and recitations three hours a week.

(3) (Emrath)

207—ADVANCED PROSPECTING. This course comprises a detailed study of the principles involved in the geophysical investigation of the minerals of the earth's crust. Lectures and recitations three hours a week.

(3) (Emrath)

208—COAL DUST INVESTIGATION. This course is essentially research in the design and utilization of a laboratory scale gallery for the investigation of the explosive qualities of native bituminous coals. Laboratory eighteen hours a week.

(6) (Emrath)

209a—ADVANCED MINE ENGINEERING. This course comprises a detailed study of the procedure and methods used in collecting and recording data and engineering information involved in the systematic development and exploitation of a mining property. Lectures and recitations three hours a week; drawing and mapping six hours a week.

(5) (Emrath)

209b—ADVANCED MINE ENGINEERING. A continuation of Mining 209a. Lectures and recitation, three hours; drafting and mapping, six hours a week.

(5) (Emrath)

VIII. FINE ARTS

ART

As prerequisite to the master's degree, the Department of Art requires preliminary work in art equivalent to that required of its majors in art. In general this means the completion of an undergraduate sequence of six to eight courses in drawing and painting or design balanced by from four to six courses in the history of art, and a reading knowledge of French or German. Graduate work for the master's degree may emphasize technical study in the fields of painting or design or non-technical study in the history of art or the criticism of art. In either case a thesis is required.

The Department is housed in a modern building with special equipment for the study of art. Studios for the practical work are designed to meet exacting professional standards. An art library adjoins the class rooms; there are also extensive collections of photographs, color reproductions, and prints. A picture gallery provides for the study of original works of art.

115a-f—INDEPENDENT WORK. Individual projects in painting or design; individual research in art history; studies in criticism. Open only to advanced students upon approval of Department Head.

(4) I, II, III (Staff)

116a—PRINT MAKING. Etching, lithography, woodcut, stencil (color). Technical instruction in executing original compositions in graphic mediums. Open only to advanced students upon approval of instructor.

(4) I, II, II (Fisk)

116b—PRINT MAKING. Continuation of 116a. Eight studio hours and weekly problems.

(4) I, II, III (Fisk)

116c—PRINT MAKING. Continuation of 116b. Eight studio hours and weekly problems.

(4) I, II, III (Fisk)

140—RENAISSANCE ART. The arts of humanism in Renaissance Italy and in the North through the sixteenth century. Renaissance "Form"; analyses of style; study of individual masters. Illustrated lectures; reports.

(4) I (Rannells)

141—BAROQUE ART. The arts of the Reformation and the Counter-Reformation in Europe through the seventeenth century. Baroque "space"; analyses of style; study of individual masters. Illustrated lectures; reports.

(4) III (Rannells)

142—MODERN ART. The arts in Europe and America through the eighteenth and nineteenth centuries. Consideration of social changes and scientific developments in relation to art. History and aesthetics; style revivals; individual artists. Illustrated lectures; reports.

(4) I (Rannells)

143—CONTEMPORARY ART. Studies in the arts of the twentieth century. Surveys and analyses. The relation of art to contemporary life. Space and Time in modern art. The evolution of modern forms in architecture, sculpture, painting and design; developments in photography, the cinema, city planning, etc. Individual artists and their work. Lectures, conferences and reports.
Prerequisite: 142

(4) II (Rannells)

147—ART IN AMERICA. American architecture, sculpture, painting, illustration, handicrafts, etc., from colonial times to the present. Illustrated lectures; critical reports.

Prerequisite: 142

(4) IV (Rannells)

151—CRITICISM OF ART. Analyses, interpretations, evaluations. Specific arts, periods of art and styles of art are examined in the light of historical modes of criticism. Problems in criticisms of contemporary art. Discussions and reports. For advanced students.
Prerequisites: advanced studio courses and 142, 143

(4) III (Rannells)

157—ART IN SECONDARY SCHOOLS. Art for teachers in the secondary schools. Problems of definition and interpretation; evaluation of visual training; the correlation of art with other subjects. Sources for art; original works, facsimile reproductions, art, literature, etc. Lectures, conferences and reports.

(4) IV (Rannells)

165a—ADVANCED PAINTING. Preparation of grounds for panel pictures: gesso, chalk, half-chalk, oil grounds. Execution of pictures in tempera, oil and mixed techniques. Twelve studio hours a week.

Prerequisite: 65b

(4) I, II, III (Fisk)

165b—ADVANCED PAINTING. Continuation of 165a. Composition problems in tempera, oil and mixed techniques

(4) I, II, III (Fisk)

165c—ADVANCED PAINTING. Continuation of 165b. Composition problems in tempera, oil and mixed techniques.

(4) I, II, III (Fisk)

167a—MURAL PAINTING. Study of mural problems; permanent grounds and pigments related to treatment of the wall sur-

face, embracing tempera and oil techniques. Study of painting techniques of the past: tempera, casein, encaustic, oil, etc. Open only to advanced students upon approval of instructor.

(4) I (Fisk)

167b—MURAL PAINTING. Continuation of 167a. Problems in mural composition.

(4) II (Fisk)

167c—MURAL PAINTING. Continuation of 167b. Problems in mural composition.

(4) III (Fisk)

MUSIC

The Department of Music requires, as prerequisite for the Master's degree, the equivalent of that required for the A. B. Degree with a major in music. Students possessing a Bachelor's degree in a field other than music may qualify as a candidate for the Master of Arts Degree with a major in music after taking the following courses in music at an accredited institution:

1. Elementary Theory, Sightsinging and Diction12 quarter hours
2. Advanced Theory, Dictation and Keyboard Harmony10 quarter hours
3. Instrumentation and Conducting 3 quarter hours
4. Form and Analysis 6 quarter hours
5. Counterpoint 6 quarter hours

NOTE.—Students, presenting credits in the above courses from an institution which is not accredited, are required to take a special examination in these courses.

A reading knowledge of one modern foreign language is required of all candidates for the Master of Arts Degree. The language to be selected shall be either French or German, except in the case of a vocal major, when Italian is preferred.

Thesis

The candidate may select as a subject for a thesis one of the following:

1. Research in some problem in the field of music education.
2. An original composition which proves the candidate's mastery of the discipline basic in harmony, counterpoint, and choral and orchestral techniques. The composition must be performed in public.

110—RESEARCH PROBLEMS IN PEDAGOGY OF THEORY. An independent course in the teaching of counterpoint and theory to be selected by the instructor on the basis of prerequisite training and practical need.

(3) I, II, III, IV (Allton)

111a—RESEARCH PROBLEMS IN MUSIC. A research course in some phase of music other than history or pedagogy of music theory. The student will confer with the instructor whenever either or both of them deem it advisable.

(3) I, II, III, IV (Capurso)

111b—RESEARCH PROBLEMS IN MUSIC. Continuation of 111a. This course permits research in some phase of music which may or may not lead to the master's degree.

(3) I, II, III, IV (Capurso)

202—HISTORY OF MUSICAL THOUGHT. The course is an intensive study of the earliest beginning of music of the 20th century. The approach, however, is not provided by purely historical study. The immediate purpose of scientific history is to exhibit its politics, the economic life, or the musical art of a past age as it once was. The larger purpose of the historian is to present this account of the past as an explanation of the way in which things of the present came to be as they are. In short this course is to be a history of musical thought.

(3) II, III, IV (Lampert)

203—CHORAL LITERATURE AND TECHNIQUE. An opportunity to study the world's best choral literature and remedial work along the lines of choral presentation; interpretation as influenced by harmonic and melodic structure, vowel production, tone quality, tempi, traditions, program building, etc.

(3) III, IV (Lewis)

204—ADVANCED BAND TECHNIQUE. An advanced course in band technique with concentration on band organization and materials, the technique of band conducting and general preparation of band instrumentations for balance, the study of transposition of band repertoire, and an intensive study in the field of band arranging.

(3) II, III, IV (Magurean)

208—SEMINAR IN MUSIC. One two-hour meeting is held each week for discussion of current developments in music found in recent books and periodicals.

(2) III, IV (Capurso)

215a, b—PIANO. A study of the major works of piano literature, such as concerti of Mozart, Beethoven, and Brahms.

(3) I, II, III, IV (Richardson)

216a, b—STRINGS. A study of the literature of the violin including the advanced Etudes, such as Fiorillo, Rode, and Dont; and major concerti such as Mendelssohn, Bruch, Beethoven, and others.

(3) I, II, III, IV (C. Lampert)

217a, b—VOICE. A study of the more advanced type of song literature covering the classic, romantic, and modern

(3) I, II, III, IV (Ogle)

218a, b—ORGAN. A study of the major works of Bach, Mendelssohn, Franck, Widor, and modern pieces of American, French, German, and English schools. (3) I, II, III, IV (Cullis)

228a, b—CONCERT BAND. A course designed to furnish methods of organization, direction, and participation in concert music.

(2) I, II, III, IV (Magurean)

MUSIC EDUCATION

Graduate Curriculum in Music Education

The following curriculum in Music Education is recommended for teachers of Public School Music leading toward the Master of Arts in Education:

Education 222, Methodology of Educational Research	5 quarter hours
Education 225, Supervision of Instruction....	5 quarter hours
Education 251, Problems in Public School and Community Music	5 quarter hours
Education 252, Field Problems in Music.....	2 quarter hours
Education 253, Independent Work in Music Education	5 quarter hours
Education 254, Problems in Educational Psychology	5 quarter hours
Music 110, Research Problems in Pedagogy of Theory	3 quarter hours
Music 111a, Research Problems in Music....	3 quarter hours
Music 111b, Research Problems in Music....	3 quarter hours
Music 203, Choral Literature and Technique	3 quarter hours
Music 204, Advanced Band Techniques.....	3 quarter hours
Music 208, Seminar in Music	2 quarter hours

Advisers: Capurso, Taylor.

In addition to the foregoing curriculum, a thesis consisting of an approved problem in the field of Music Education will be required.

A student, wishing to complete the degree requirements on a fifty-four hour basis without a thesis, must select courses at the "200 level" in the amount of twenty-seven credits approved by the Dean of the College of Education and the Executive Director of the Music Department.

Ed. 251—PROBLEMS IN PUBLIC SCHOOL AND COMMUNITY MUSIC. This course, open only to advanced students, will consider problems in teaching, supervising, organizing, and leading public school and community activities. Students in service will have an opportunity to bring problems from their own school or

community situation; and, when possible, the instructor will visit them in the field. Projects, demonstrations, reading, and discussion.
(5) (Capurso)

Ed. 252—FIELD PROBLEMS. This course is designed to permit the teacher or leader in the field to work out his local problems as an independent graduate teaching project under the guidance of the music staff.

(2) IV (Capurso)

Ed. 253—INDEPENDENT WORK IN MUSIC EDUCATION. This course is designed for graduate students who undertake research problems in music education and is to be conducted in regular consultation with the instructor.

(5) IV (Capurso)

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IX. LAW

The following courses in the College of Law are accepted as graduate work when taken by students majoring in Political Science, Economics, Sociology, Commerce or other fields in which such courses are recommended by the major professors.

101a-101b—CONTRACTS I and II. Williston's Cases (4th edition). Formation, parties, consideration, formalities, contracts for the benefit of third persons, assignments, joint obligations, conditions and implied conditions, impossibility.

(5) I; (4) II (Murray)

102a-102b—TORTS I, II, III. Bohlen's Cases (3rd edition). Assault and battery, false imprisonment, negligence and contributory negligence, unintended non-negligent interference, deceit, malicious prosecution, defamation, interference with privacy, interference with advantageous relations.

(3) I; (3) II; (3) III (Evans)

103—PROPERTY I—Personal Property. Roberts' Cases on Personal Property. The nature of possession, separation of the custody or use from the possession, bailments, finders, bona fide purchase, judicial sale, Statute of Limitations, accession, tortious confusion, gifts, sale and bailments, liens and pledges, conversion.

(3) I (Roberts)

104a-104b—PROPERTY IIa-b—Real Property. Warren's Cases on Real Property. Estates, common law method of creating and conveying estates, Statute of Uses, rights incident to the ownership of land, fixtures, easements, waste, emblements, licenses and covenants running with the land.

(2) II; (2) III (Roberts)

105—AGENCY. Steffen's Cases. Nature of the relation, competency of parties, appointment, delegation of authority, liabilities of principal and of agent, ratification, undisclosed principal, termination.

(3) III (Pittman)

107a-b—CRIMINAL LAW I and II. Hall and Glueck's Cases on Criminal Law. Keedy's Cases on Criminal Procedure. Nature of the crime problem, the theory of punishment, procedure, characteristics of particular crimes.

(3) II; (3) III (Moreland)

121a-121b—EQUITY I and II. Cook's Cases (3rd edition). Methods of enforcing and legal effects of equitable decrees, relation of common law and equity, powers of courts of equity, inadequacy of

remedy at law, interests protected, balancing the equities. Specific performance, affirmative and negative contracts, mutuality consideration, conditions, marketable title, laches and the Statute of Limitations, partial performance with compensation, the Statute of Frauds, equitable conversion, equitable servitudes, misrepresentations, mistake, hardship, plaintiff's conduct as a defense.

(4) I; (4) II (Pittman)

122—PROPERTY III. Titles and Conveyancing. Warren's Cases. Adverse possession, prescription, accretion, execution and delivery of deeds, boundaries, exception and reservation, easements by implication, covenants of title, estoppel, priorities.

(3) I (Roberts)

123—NEGOTIABLE INSTRUMENTS. Bills and Notes, Britton's Cases (2nd edition). Formal requisites of negotiability, acceptance, delivery, endorsement, rights and duties of holder, liability of maker, acceptor, drawer and endorser.

(4) II (Murray)

141—PARTNERSHIP. Crane and Magrauder's Cases.

(2) II (Evans)

142—INDUSTRIAL RELATIONS. Albertsworth's Cases. The servant at common law, constitutionality of compensation acts, Kentucky and other compensation acts, abolishment of common law defenses, class legislation, police power, compulsory acts, "personal injury by accident," sunstroke, pre-existing diseases, traumatic injuries, occupational diseases, the locus of the accident, horse-play, an intensive study of the provisions of the Kentucky Workmen's Compensation Act.

(2½) IV (Moreland)

144—USE OF LAW BOOKS. Selected Problems, Eldean's "How to Find the Law." How to find the law, use of digests, reports, textbooks and encyclopedias.

(1) III (Librarian)

145—INSURANCE. Goble's Cases. Insurable interests, the contract, concealment, representations and warranties, implied conditions, waiver and estoppel, construction.

(3) I (Murray)

147—QUASI-CONTRACTS. Woodruff's Cases. Nature of quasi-contracts, benefits conferred by mistake, benefits conferred where further performance is impossible or contract is illegal or unenforceable, benefits conferred without contract or under compulsion.

(3) I (Murray)

148—DOMESTIC RELATIONS. Jacob's Cases. Marriage and divorce, property interests of husband and wife, mutual obligations of the spouses, parent and child.

(3) III (Moreland)

149—MUNICIPAL CORPORATIONS. Tooke's Cases. Incorporation and existence, municipal officers, revenue, indebtedness, police power, zoning, liability for injuries received upon contracts implied in law and on implied contracts.

(2½) IV (Randall)

150—PUBLIC UTILITIES. Robinson's Cases (2nd edition). Nature of public service, public employment and profession, withdrawal, duty to public, refusing service, commencement of service, management, liability for default, termination of service, regulation of charges, discrimination.

(4) III (Moreland)

152—OIL AND GAS. Kulp's Cases. Nature of landlord's right in oil and gas, interference, measures of damages, the oil and gas lease, drilling operations, storage and use of oil and gas, pipe line and transportation companies, taxation.

(2½) IV (Moreland)

153—TAXATION. Magill and Maguire's Cases. Property, estate, inheritance, gift, income, and excise taxes on business concerns.

(5) III (Roberts)

154—DAMAGES. McCormick's Cases. Nature of damages, avoidable consequences, counsel fees, certainty, compensation, damages for non-pecuniary injuries, pain, inconvenience, mental suffering, aggravation value, interest, special rules in certain actions, damages for death, eminent domain.

(2½) IV (Randall)

160—PRIVATE CORPORATIONS. Frey's Cases. Characteristics, formation, powers and liabilities, rights of stockholders, directors, legislative control, dissolution, creditors.

(6) III (Evans)

161a-b—CONSTITUTIONAL LAW. I and II Dodd's Cases. Division of powers, the dual system of government, scope of federal powers, taxation, money, banking, postal, military and treaty powers, regulation of commerce, the impairment of contracts, jurisdiction of federal courts, the police power, due process of law, equal protection of the law.

(2) II; (4) III (Moreland)

162—PROPERTY IV. Future Interests. Leach's Cases on Future Interests. Rights of entry, possibilities of reverter, reversions, remainders, executory limitations, limitations to classes, powers, rule against perpetuities and illegal restraints and conditions.

(4) II (Roberts)

163—WILLS AND THE ADMINISTRATION OF ESTATES. Mechem and Atkinson's Cases. Testamentary capacity, the making, revocation, republication and revival of wills, lapsed and void devises and legacies, jurisdiction of courts to grant letters testamentary and of administration, the interests, contracts and transfers of the personal representative, inventory, inheritance tax, payment of debts, legacies and distributive shares.

(4) III (Evans)

164—CONFLICT OF LAWS. Cheatham, Dowling and Goodrich's Cases. Domicile, jurisdiction of courts, procedure, contracts, property, movable and immovable, family law, divorce, inheritance, foreign administration, foreign judgments.

(5) I (Moreland)

165a-b—TRUSTS. I and II Scott's Cases (3d ed.). The nature of a trust as compared with other relations, the creation and elements of a trust including charitable trusts, resulting and constructive trusts, remedies of the cestui que trust, the transfer by the cestui to trust, who are bound, liabilities of the trustee, investment of funds, termination of trusts.

(3) I; (3) II (Evans)

166—SALES. Williston's and McCurdy's Cases. Subject matter of sale, executory and executed sales, bills of lading, fraud, liens and their enforcement, stoppage *in transitu*, inspection, warranty and remedies for breach of warranty, Statute of Frauds.

(5) III (Murray)

167—ADMINISTRATIVE LAW. Stason's Cases. Administrative power and action, administrative discretion, notice of hearing, summary action, relief against administrative action, mandamus, certiorari, and other extraordinary legal remedies, equitable relief, jurisdictional limitations, and administrative finality.

(4) I (Pittman)

168—ADMINISTRATION OF THE CRIMINAL LAW. Keedy's Cases on the Administration of Criminal Law. Police officers, arrest, investigation of crime, the magistrate, indictment and information, jurisdiction of the trial court, venue, interstate rendition, arraignment, the petit jury, the prosecuting attorney, counsel for defense, the verdict, methods of review.

(3) I (Moreland)

174a—MORTGAGES. Casebook to be selected.

(3) II (Roberts)

174b—SURETYSHIP. Casebook to be selected.

(2) I (Roberts)

177—STATUTORY INTERPRETATION. de Sloovere's Cases. Judicial notice; process of interpretation; subject matter and purpose of the statute; context; associated words; extrinsic aids; relation to other statutes and to the common law; mandatory and directory provisions; operation; effect; repeal.

(2½) IV (Murray)

176—TRADE REGULATION. Oppenheim's Cases. Contracts not to compete at common law; competitive practices; intimidating and molesting; unfair practices; unfair advertising; combinations; the earlier statutes and the N. I. R. A.

(3) I (Roberts)

178—CREDITORS' RIGHTS. Hanna and McLaughlin's Cases. Enforcement of judgments; fraudulent conveyances; general assignments; receivership; bankruptcy; assets; distribution.

(4) II (Roberts)

179—LEGISLATION. Horack's Cases. Typical federal and state statutes will be used. The history of legislation, legislative agencies, content, preparation, province and subject matter, legislative drafting, means of making laws effective, mechanics, interpretation, operation, amendment, abrogation and repeal, relation of traditional law to legislation.

(2½) IV (Pittman)

180—LABOR LAW. Landis' cases. Case and statute law applicable to labor controversies; the trade agreement between the employer and the union; the boycott; the use of the union label on goods; federal intervention in labor disputes; and employer interference with the right to work and trade.

(2½) IV (Eblen)

182—DEFENSE LEGISLATION AND MILITARY LAW. Schiller's Cases. Recent defense legislation affecting industries; legislation affecting property rights; legislation dealing with the establishing of a more efficient army and navy, including the Selective Service Act of 1940, the National Guard and Reserve Officers Mobilization Act and the act extending the time of service; legislation affecting the legal status of soldiers and sailors as provided in the Soldiers and Sailors' Civil Relief Act of 1940; constitutional aspects of the questions involved.

(4) I (Roberts)

X. SOCIAL WORK

Perhaps no profession offers more challenge than the new-comer among the professions—social work. During the past decade federal grants-in-aid together with increased local appropriations have made possible rapid developments in public welfare. Now, social services are also being provided both for men in the military forces, and for their families at home. Yet all these programs are being hampered by their inability to secure professional social workers.

Social workers are needed to give competent assistance to those in trouble—the unemployed, the aged, the transient, the physically and mentally handicapped; the neglected, the dependent, and the delinquent child; and enlisted men and veterans. They are in demand also for programs which will prevent the recurrence of such problems—group work, social welfare planning, and research. It is estimated that at the present time there are some 70,000 positions, and, about 14,000 social workers who have professional education. Herein lies the challenge.

CURRICULUM. The University offers the first graduate year of professional social work education. It is built about the generic methods and principles common to the various specialized fields of social work. Field work is provided in order that the student may learn under supervision to integrate theory with practice and to master some of the basic skills of the profession. Placements are available in the Lexington Family Welfare Association and in the University Public Welfare Field Center in Clark County. At the field center the student may participate in a cross section of the various public and private programs which are serving people living in small towns and rural areas.

ADMISSION. Students are eligible for admission to this graduate year who (a) meet the general requirements for admission to the graduate school, and (b) offer 36 quarter hours of undergraduate work in the social sciences and consultation with the department. Students with a bachelor's degree from an accredited institution who lack this prerequisite may be admitted to graduate social work courses provided they also carry work in the social sciences to make up their deficiency.

This department will also admit to its graduate course a limited number of mature persons with successful experience in social work or allied fields who do not have a bachelor's degree from an accredited institution. However, no graduate credit is given for courses taken under this arrangement.

Students desiring to enter upon graduate education in social work should make application to the department on blanks provided

by it at least two weeks before the opening of the academic year in order that qualifications may be considered and plans made for field work placements.

200—PUBLIC WELFARE ADMINISTRATION—An introduction to the historical background, philosophy, and methods of tax supported social work. Emphasis will be given to problems of the inter-relationship of federal, state, and local services, financing, standards, and supervision.

(2) II

205—CHILD WELFARE. A study of the development of provisions for the protection and care of children with special attention to Child Welfare Services, Mother's Aid, Juvenile Courts and child labor legislation.

(4) III

210—PSYCHIATRIC INFORMATION FOR SOCIAL WORKERS. An analysis of the personality development, and behavior patterns with special reference to psychiatric interpretations and their implications for social case work.

(2) II

213—GENERIC SOCIAL CASE WORK I. An introductory course in the generic principles of social case work. Discussions based on selected readings and case records.

(2) I

215—SOCIAL STATISTICS—A study of the application of statistics to social work problems. Emphasis is placed on the critical evaluation and interpretation of statistical material drawn from selected studies.

(2) II

216—SOCIAL INVESTIGATION. A consideration of the methods used in the investigation of social work problems. Successive steps in the process are considered with discussion based on pertinent welfare studies.

(2) I

217—GENERIC SOCIAL CASE WORK II. A continuation of course 213 with emphasis upon the application of case work principles in problems of increasing complexity.

(2) II

220a—SUPERVISED FIELD WORK. One hundred fifty clock hours of supervised field work in a public or private agency.

(3) I

220b—SUPERVISED FIELD WORK. One hundred fifty clock hours of supervised field work in a public or private agency.

(3) II

220c—SUPERVISED FIELD WORK. Two hundred clock hours of supervised field work in a public or private agency.

(4) III

221—ADVANCED SOCIAL CASE WORK I. An advanced course built around the theoretical aspects of case work problems encountered by the students in their field work, and supplemented by discussions of cases presenting other problems.

(2) III

227—PROBLEMS OF RURAL SOCIAL WORK. Rural needs and social welfare programs to meet them will be studied in selected rural areas and the findings will be related to larger social welfare problems and programs. The relationship of social work programs to other community programs in these areas will also be considered.

(4) III

230a, b—COMMUNITY ORGANIZATION FOR SOCIAL WELFARE. Methods and techniques of social welfare planning for the treatment and prevention of social problems. Analysis of the needs and resources, coordination of existing agencies, financing and developing chest and council programs, and the interpretation of social work to the community will be among the subjects treated.

(2) II

SOCIOLOGY (See Social Science)

RURAL SOCIOLOGY (See Agriculture)

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GRADUATE SCHOOL

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UNIVERSITY EXTENSION DEPARTMENT

Louis Clifton, M. A.

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