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COLLEGE OF ARTS AND SCIENCES

1935-1936

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COLLEGE OF ARTS AND SCIENCES

1935-1936

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THE OHIO STATE UNIVERSITY

COLUMBUS

COLLEGE OF ARTS AND SCIENCES

1935-1936

THE OHIO STATE UNIVERSITY
COLUMBUS

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CALENDAR FOR 1936

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UNIVERSITY CALENDAR

1935

SUMMER QUARTER

May 31 to June 1	Entrance Examinations.
June 15 to 22	Physical Examinations for all new students.
June 17	Latest day for registration and payment of fees without penalty. (See page 20.)
June 18	Classes begin, 7:30 A.M.
June 22	Intelligence Test for all new students (Saturday P.M.).
July 4	Independence Day. No classes.
July 22, 23, 24	Final Examinations, first term (at regular class hours).
July 19, 20	Physical Examinations for all new students.
July 24	First term ends, 5:30 P.M.
July 25	Second term begins, 7:30 A.M.
July 27	Intelligence Test for all new students (Saturday P.M.).
August 28, 29, 30	Final Examinations (at regular class hours).
August 30	Summer Convocation (Commencement), 2:00 P.M.
August 30	Summer Quarter ends, 6:00 P.M.

AUTUMN QUARTER

September 26 to 28	Entrance Examinations.
September 25 to 30	Freshman Week.
September 30	Physical Examinations for students other than Freshmen.
September 30	Latest day for registration and payment of fees without penalty. (See page 20.)
October 1	Classes begin, 8:00 A.M.
October 5	Intelligence Test for all new students other than Freshmen (Saturday A.M.).
November 11	Armistice Day. No classes after 12 M.
November 28, 29, 30	Thanksgiving Recess.
December 18, 19, 20, 21	Final Examinations.
December 20	Autumn Convocation (Commencement), 2:00 P.M.
December 21	Autumn Quarter ends, 6:00 P.M.

1936

WINTER QUARTER

January 6 to 9	Physical Examinations for all new students.
January 6	Latest day for registration and payment of fees without penalty. (See page 20.)
January 7	Classes begin, 8:00 A.M.
January 11	Intelligence Test for all new students (Saturday A.M.).
February 22	University Day. No classes.
March 18, 19, 20, 21	Final Examinations.
March 20	Winter Convocation (Commencement), 2:00 P.M.
March 21	Winter Quarter ends, 6:00 P.M.

SPRING QUARTER

March 30	Latest day for registration and payment of fees without penalty. (See page 20.)
March 31	Classes begin, 8:00 A.M.
March 30 to April 1	Physical Examinations for all new students.
April 4	Intelligence Test for all new students (Saturday A.M.).
May 29	R. O. T. C. Review and Presentation of Commissions.
May 30	Memorial Day. No classes.
June 10, 11, 12, 13	Final Examinations.
June 13	Alumni Day.
June 14	Baccalaureate Sermon.
June 15	Class Day.
June 15	Spring Convocation (Commencement).
June 15	Spring Quarter ends.
June 22	Summer Quarter (1936) begins.
September 4	Summer Quarter (1936) ends.
September 29	Autumn Quarter (1936) classes begin.

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* Died, January 14, 1935.

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W. CONARD FERNELIUS, A.M., Ph.D. — *Assistant Professor of Chemistry*
ROBERT FOURE, B. es L. — *Assistant Professor of Romance Languages*
WALTER GAUSEWITZ, M.A. — *Assistant Professor of German*
JEROME B. GREEN, M.S., Ph.D. — *Assistant Professor of Physics*
SANTIAGO GUTIERREZ, B.A., LL.B., *Assistant Professor of Romance Languages*
THEODORE E. HAMILTON, A.M., Ph.D., *Assistant Professor of Romance Languages*
HERMAN G. HEIL, Ph.B. — *Assistant Professor of Physics*
ALMA HERBST, B.A., Ph.D. — *Assistant Professor of Economics*
CEDRIC EDWARD HESTHAL, A.B., A.M., Ph.D. — *Assistant Professor of Physics*
FRED A. HITCHCOCK, M.Sc., Ph.D. — *Assistant Professor of Physiology*
MARION HOLLINGSWORTH, M.A., Ph.D. — *Assistant Professor of Chemistry*
HAROLD P. KNAUSS, M.S., Ph.D. — *Assistant Professor of Physics*
WENCEL J. KOSTIR, M.A. — *Assistant Professor of Zoology and Entomology*
LINCOLN LAPAZ, M.A., Ph.D. — *Assistant Professor of Mathematics*
NORVAL N. LUXON, B.Sc. in Jour., M.A. — *Assistant Professor of Journalism*
MARIE K. MASON, B.A., M.A. — *Assistant Professor of Phonetics*
HERMAN A. MILLER, A.M. — *Assistant Professor of English*
ROBERT S. NEWDICK, A.M., Ph.D. — *Assistant Professor of English*
HAROLD H. NIELSEN, B.S., A.M., Ph.D. — *Assistant Professor of Physics*
ROBERT D. PATTON, M.A. — *Assistant Professor of Economics*
THOMAS CLARK POLLOCK, B.A., M.A., Ph.D. — *Assistant Professor of English*
MARION L. POOL, Ph.D. — *Assistant Professor of Physics*
HORTENSE RICKARD, M.A. — *Assistant Professor of Mathematics*
EUGENE H. ROSEBOOM, M.A., Ph.D. — *Assistant Professor of History*
HUGH E. SETTERFIELD, M.Sc. — *Assistant Professor of Anatomy*
HENRY H. SIMMS, M.A., Ph.D. — *Assistant Professor of History*
FRED SPEER, D.V.M. — *Assistant Professor of Bacteriology*
GRACE ANNE STEWART, M.A., Ph.D. — *Assistant Professor of Geology*
MAY THOMAS, Ph.D. — *Emeritus Assistant Professor of German*
FRANCIS P. WEISENBURGER, A.M., Ph.D. — *Assistant Professor of History*
HELEN L. WIKOFF, B.A., M.Sc., Ph.D., *Assistant Professor of Physiological Chemistry, Pharmacology, and Materia Medica*
MELVILLE L. WOLFROM, M.Sc., Ph.D. — *Assistant Professor of Chemistry*
ROBERT V. ZUMSTEIN, M.A., Ph.D. — *Assistant Professor of Physics*
WILLARD BERRY, Ph.D. — *Instructor in Geology*
H. SCHUYLER FOSTER, JR., B.S., M.A. — *Instructor in Political Science*
JOHN N. HOUGH, A.M., Ph.D. — *Instructor in Classical Languages*
WILLIAM H. REITHER, A.B., A.M., Ph.D. — *Instructor in Philosophy*
EDITH M. SNIFFEN, M.A. — *Instructor in English*

THE OHIO STATE UNIVERSITY

LOCATION

The Ohio State University is situated within the corporate limits of the city of Columbus. It is supported by appropriations from the State and Federal governments. The University has almost 1,400 acres of land with nearly 400 acres in the campus. The total value of land, buildings, and equipment is $22,415,383.00.

ORGANIZATION

For convenience of administration the departments of the University are grouped into organizations called Colleges. The Ohio State University comprises ten Colleges and a Graduate School, each under the administration of a Dean and College Faculty, as follows:

Graduate School, College of Agriculture (including the School of Home Economics), College of Arts and Sciences, College of Commerce and Administration (including the Schools of Journalism and Social Administration), College of Dentistry, College of Education, College of Engineering (including the School of Mineral Industries), College of Law, College of Medicine (including the School of Nursing), College of Pharmacy, College of Veterinary Medicine.

THE UNIVERSITY YEAR—FOUR QUARTERS

The University year is divided into four Quarters, each approximately eleven weeks in length. The Summer Quarter is further divided into two terms of approximately six weeks each. Complete courses that are so announced may be taken for either term or for the entire Quarter.

This *Bulletin* is devoted to the work of the College of Arts and Sciences for the Autumn, Winter, and Spring Quarters, 1935-1936. The announcements for the Summer Quarter are printed in the Summer Quarter Bulletin.

NOTE: Bulletins describing the work of the several Colleges may be obtained by addressing the University Examiner, The Ohio State University, Columbus, and stating the College in which the writer is interested. (For list of bulletins, see the last page.)

JUNIOR DEANS

The Junior Deans are the chief advisers of the Freshmen and Sophomores in all University matters. They keep a close supervision over the work of these students and help them to adjust themselves to their new surroundings.

The Junior Council, consisting of the Junior Deans and certain other members of the University Faculty under the leadership of the President of the University, have under consideration constantly the problems of providing more satisfactory methods of instruction for the increasing numbers of underclassmen, as well as the problem of adjusting the curricula of the various colleges to meet the varying needs of particular groups of students.

COLLEGE OF ARTS AND SCIENCES

THE COLLEGE OFFICE

The office of the College of Arts and Sciences is located at the east end of the first floor of University Hall in Room 108. The office is open from 8 A. M. to 12 noon and from 1 P. M. to 5 P. M. daily except Saturday, when it closes at noon. Students are urged to make use of the facilities of the office when in need of information or advice concerning their college course. The Dean, the Junior Dean, the Student Counselor, the Secretary and others in the office are ready to assist the students of the College in meeting their college problems.

The offices of the President of the University, the University Examiner, the Registrar, and the Bursar are located in the Administration Building.

AIMS AND PURPOSES

The College of Arts and Sciences has for its objective the provision of the means to a liberal education. The primary purpose of a liberal education is not the accumulation of a mass of factual information, but the development of intellectual proficiencies and capacities, the acquisition of strong and definite intellectual interests, the achievement of intellectually grounded attitudes and points of view. Among the specific attainments which a liberal education should secure are an open mind, freed from bias and prejudice; an eagerness for truth, and a willingness to follow it wherever it may lead, regardless of preconceived notions; a critical skepticism which insists upon examining the basis of every belief and testing every proposal before giving it adherence; the ability to recognize a problem, to analyze it into its several elements, and to perceive its various ramifications; the power to discern relationships and to bring an entire situation into clear perspective; a deep respect for human institutions and conventions, based upon an understanding of the processes of social evolution, together with a fearless willingness to attack them when they have ceased to serve a useful purpose, based upon a comprehension of the changing and dynamic character of social forms; a keen appreciation of the emotional and aesthetic values of life with intelligent standards for judging them; and the ready use of the spoken and written language as instruments of communication.

The College seeks to interpret modern civilization to the youth who are to play an active role of leadership in the world of today. The liberally educated man may not be a specialist in any field, but he must at least know sufficient of the methods, the problems, and the criteria of science to understand the scientific spirit; he must be sufficiently acquainted with the great movements of history and the social and economic questions of our own time to have developed a social outlook on life; he must have enough of an apprehension of the currents of human thought and the problems of human conduct to have developed for himself a working scheme of values; he must have acquired from reading, study, and experience an appreciation of the best in literature and art; and he must be able to communicate in an intelligent and intelligible fashion with his fellows.

The College of Arts and Sciences offers a wide variety of courses in Accounting, Agricultural Chemistry, Anatomy, Astronomy, Bacteriology, Botany, Chemical Engineering, Chemistry, Economics, English, Entomology, Fine Arts, French, Geography, Geology, German, Greek, History, Home Economics, Italian, Journalism, Latin, Mathematics, Mineralogy, Music, Philosophy, Phonetics, Physics, Physiological Chemistry, Physiology, Political Science, Psychology, Public Speaking, Social Administration, Sociology, Spanish, and Zoology.

The first two years' work, or junior division, affords the student an opportunity to survey some of the general fields of the natural and social sciences, language and literature, and to perfect his use of the tools required in more advanced studies. The junior division is preparatory and serves as a bridge from high school to more advanced university work. It aims to lay a substantial foundation upon which the student may build a professional training, particularly in Law, Medicine, and Dentistry, or proceed to the more intensive work which a liberal education implies. During the last two years of college work, the senior division, a considerable degree of concentration in a major field is required, though ample opportunity is given for cultivating related interests or pursuing studies which do not fall within the field of the student's major.

GRADUATE COURSES

The graduate instruction offered by the departments represented in the College of Arts and Sciences is given under the direction of the Graduate School. The Bulletin of the Graduate School may be obtained by addressing the University Examiner.

GRADUATE CREDIT FOR SENIORS

A Senior whose full time is not required for the completion of the work for his baccalaureate degree may select certain courses for graduate credit, *but to do this the permission of the Graduate Council (Room 106, University Hall) must be obtained before registering for the courses.*

MILITARY SCIENCE

In accordance with the Morrill Act, passed in 1862, under which the University was established, military instruction must be included in the curricula. The Board of Trustees therefore requires all male students, both special and regular, unless excused by the Department of Military Science and Tactics, to receive military instruction during the first two years in Infantry, Field Artillery, or Signal Corps, the choice at the option of the student.

The Reserve Officers' Training Corps was established under the National Defense Act of June 3, 1916, and June 4, 1920, the required two years' work being included in its four-year course, the third and fourth years being elective. Instruction is given in Infantry, Field Artillery, and Signal Corps.

Uniform is furnished Freshmen upon deposit of approximately $25.00 being made with the Contractor. The University has adopted its own style of uniform, which is required to last two years. Last year the Basic Course students were paid commutation of uniform amounting to $9.00 each for the academic year. This allowance is prorated to students who do not remain in attendance during the entire academic year, but is paid by the Bursar in whole or in part only at the close of the Spring Quarter of each academic year.

Students taking Advanced Courses in Military Science receive commutation of rations which last year amounted to twenty-six cents a day and is payable quarterly, and commutation of uniform which last year amounted to $29.00 for the First Year Advanced men (Juniors), and to $7.00 for the Second Year Advanced men (Seniors).

The total credit in this department allowed toward a degree is 18 Quarter-hours, exclusive of Infantry 401-402-403, 404-405-406, Field Artillery 421-422-

423, 424-425-426, or Signal Corps 441-442-443, 444-445-446, required of all male students in the first and second years, for which 6 credit hours are granted.

PHYSICAL EDUCATION

Courses in Physical Education and Health Education are conducted by the Department of Physical Education.

Regular class exercise, two hours each week, is required during the first year of a male student's residence at the University or until he has successfully completed one year of Physical Education. Women students are required to complete two years' work. Hygiene, one hour each week, is required of both men and women during one Quarter of the first year. A thorough physical examination is required of all undergraduate students entering the University for the first time. Physical defects, abnormalities, and weaknesses are noted, and exercise is prescribed to fit the student's individual needs.

MEDALS AND PRIZES

THE RHODES SCHOLARSHIPS

Men who have completed their Sophomore year at the Ohio State University are eligible to compete for the Cecil Rhodes Scholarships, tenable for three years at Oxford University, England, with a stipend of four hundred pounds each year. These scholarships are awarded on the combined basis of character, scholarship, athletics, and leadership in extra-curricular activities. Further information may be obtained from Royall H. Snow, Department of English, Derby Hall; or from the Dean of the College of Arts and Sciences.

THE WILLIAM EDWARD BINGHAM MEMORIAL MEDAL IN PHILOSOPHY

A medal is awarded annually to the undergraduate who presents the best essay on a philosophical topic. The conditions of the competition are fixed by the Department of Philosophy. The medal, established in 1922, is a memorial to William Edward Bingham, a graduate student in philosophy in this institution from 1914 to 1916; he served in the United States Navy from April, 1917, to December, 1918, when he was accidentally drowned in the performance of his duties in the harbor of Tangier. The medal was executed by Mme. Anie Mouroux.

THE BRYAN PRIZE

Through the generosity of the late Hon. William J. Bryan an annual prize of $60 is offered for the best essay on a subject involving the principles underlying the American government. Competition for this prize is open to all graduate students who are alumni of this University and to all members of the graduating class. For further information make inquiry of the Chairman of the Department of History.

THE VANDEWATER POETRY PRIZE

The Vandewater Poetry Prize was established Semicentennial Week by Mrs. Sarah O'Kane Raymund, '91, in honor of her grandfather. All students, graduate or undergraduate, *in residence* in the University are eligible to compete. No limit is set to the number of contributions that may be offered by one contestant. Announcement of the award is made in May. The sum of $25 is presented to the successful contestant at the June Commencement and the winning poem is published in *The Ohio State University Monthly* and in *The Ohio State Lantern*. The judges are members of the Staff of the Department of English or others chosen by them. If in any year none of the work submitted is of sufficient merit, the donor provides that the income be spent by the Department of English for books of poetry or criticism to be deposited in the University Library.

THE JOHN GORDON BATTELLE MILITARY PRIZE

The income of the John Gordon Battelle fund, established in 1916, is to be used as a yearly prize for senior officers in the cadet regiments of the Infantry and Field Artillery Units for the best solution of a military map problem. The income is now sufficient to offer a substantial prize to the winner in each of these units.

THE SWORD OF '86

The Class of 1886 presented the Military Department with a prize sword to be presented to the Cadet Captain of the Infantry Company which wins the Annual Competitive Drill of the Cadet Regiments, who has the privilege of wearing it for one year. At the close of the year he is presented with a regulation Officer's sword and belt to be his personal property, and the Sword of '86 is returned to the Military Department.

CHI OMEGA PRIZE

By gift of Chi Omega Sorority a prize of $25 is offered annually for the best paper by a university woman on some phase of economics or sociology. The paper must be submitted to the Dean of the College of Commerce and Administration by May first each year.

UNIVERSITY HEALTH SERVICE

Hayes Hall

Medical Staff: Dr. John W. Wilce, Director; Dr. M. F. Osborn, Dr. J. M. Foley, Dr. James A. Beer, Dr. Shirley Armstrong, Dr. Charlotte Winnemore.

Office Hours: When the University is in session, daily 8:30 to 12:00 and 1:00 to 4:30; Saturday, 8:30 to 12:00. Phone: Campus 461.

The object of the University Health Service is to render first aid and casual treatment to students on the campus. When, in the judgment of the University Health Service physicians, hospitalization for observation and diagnosis is necessary, such is provided without charge.

Seniors are given a complete health examination on application at the University Health Service in Hayes Hall.

ADMISSION

METHOD OF ADMISSION

The admission of all students to any department of the University is in charge of the University Entrance Board, which conducts all entrance examinations and adjusts credits on all certificates presented for admission or for advanced standing. All correspondence relating to admission should be addressed to the University Examiner, The Ohio State University, Columbus.

ADMISSION OF GRADUATES OF OHIO HIGH SCHOOLS

In compliance with the statutes of the State of Ohio, the holder of a diploma from a first grade high school in the State will be admitted to the College of Arts and Sciences upon presentation of his high school certificate.

As a broad and adequate foundation for the course in Arts and Sciences the following distribution of units in the high school is strongly urged: three units in English; one in United States history (or in history and civil government); one in algebra; one in geometry; one in physics or in chemistry; one in botany or in zoology; four in one foreign language such as Latin, French, German, or Spanish; three additional units in these or other studies. Students who start a language in their first year of high school are advised to continue that language through all four years. It is found that students who interrupt the study of a language have difficulty in resuming *that language* and are

therefore likely to lose the benefits accruing to them towards the completion of College requirements.

If the distribution of units differs from that just specified, the student will have to carry corresponding courses in college. This will limit his choice of electives and in some cases may extend his course beyond that of other students. *A student deficient in algebra or geometry will be entered with conditions;* such deficiency must be made up outside of college classes and removed by taking entrance examinations before entering upon the second year of residence.

A student who has not had a year of American History, of physics or chemistry, or of biological science in high school must take, in addition to the regular requirements in college, one Quarter of the subject in which he is deficient, unless he elects to fulfil as one of his required sequences the one which includes the subject involved.

ADMISSION OF CANDIDATES OTHER THAN GRADUATES OF OHIO HIGH SCHOOLS

Graduates of high schools in states other than Ohio will be considered for admission if the certificates of their high schools are accepted by the leading colleges of their own states.

Graduates of approved preparatory schools and normal schools will be considered for admission on their certificates.

Any candidate may be admitted by successfully passing entrance examinations covering fifteen units of college entrance subjects. For detailed information address the University Examiner.

ADMISSION OF SPECIAL STUDENTS OF MATURE YEARS

A person of mature years who is unable to meet the entrance requirements in all respects, under certain circumstances may be permitted to matriculate for specified courses for which he can demonstrate adequate qualifications. An applicant under twenty-one years of age will not be considered. Inquiry concerning such admission should be addressed to the University Examiner. A personal interview with an applicant for admission as a special student is desired. This status is not available to students dismissed from the University for academic or other reasons.

ADMISSION TO ADVANCED STANDING

An applicant presenting credentials for admission to advanced standing will in general be refused admission unless his record discloses a grade of at least "C" as an average of all courses undertaken. The University Examiner may admit an applicant who does not fully meet this standard provided his record is one that shows progressive improvement, and provided the total credits allowed shall not be more than one-half the credit points counted on the applicant's complete record.

Admission to the Senior Division of the College of Arts and Sciences is conditional upon the completion of the Junior Division requirements of the college. Eligibility may be determined by consulting members of the college staff after they have had an opportunity to examine an evaluation of the student's transfer credits. Members of the college staff are available for consultation throughout the year, including the summer.

ADMISSION AS AN AUDITOR

A student in the University may audit a course without additional fee, upon the written approval of the professor in charge, the department chairman, and the Dean of the College.

One not a student in the University may be admitted as an auditor by the University Examiner after satisfying all entrance requirements and subsequently paying the fees required in the College in which he desires mainly to audit.

REGISTRATION

FRESHMAN WEEK

All Freshmen are required to be present at the University for a special Freshman Program which precedes the opening of the University. This program will begin on Wednesday, September 25, at 3:00 P. M. and will continue through the following Monday, September 30. This session is known as Freshman Week.

During this period Freshmen will become familiar with the Campus. They will be given needed information on the history and traditions of the University, as well as definite information on student activities and eligibility requirements. There will be lectures and discussions of vital importance to any student beginning his college career. Faculty advisers will conduct personal interviews with students to discuss their plans for a university education.

Intelligence tests, physical examinations, and placement tests are also a part of the Freshman Week Program.

The program of Freshman Week is planned to give students, new to the Campus, an opportunity to adjust themselves to new conditions before the regular routine of class-room work begins.

In connection with the Freshman Week program, a conference for parents will be held on the opening day, Wednesday, September 25. Opportunity will be presented for parents to meet the President and other university officers. A formal presentation will be made of the University's personnel program with freshman students.

Freshmen must be present on the opening date, September 25, for the first meeting, scheduled at 3:00 p. m. A penalty of $5.00 for each day of absence will be imposed. This is the usual penalty for late registration. The exercises of Freshman Week will be of the greatest benefit to the Freshmen and attendance upon them is required. All cases of failure to appear on this day or to be present at any of the exercises of Freshman Week will be reported to the President for action.

All Freshmen are urged to complete their registration and pay their fees before September 25, in order that they may be free to participate in the program of Freshman Week.

REGISTRATION

Under the Quarter plan each student will present his program of studies for only one Quarter at a time. Election cards for registration are obtained from the Registrar and are ready for distribution approximately two months prior to the opening of the Quarter. The exact date will be published in the Official Daily Bulletin and definite days will be announced during which every student in residence will be required to file his program of studies for the following Quarter. Persons who are not in residence may register in person or by mail at any time after the election cards are available for the following Quarter. Fees may be paid as soon as fee cards have been received by the student from the Registrar. *Students are expected to pay their fees before the day designated in the University Calendar for classes to begin and to report promptly to their classes on the first day that classes are scheduled.* Students who have registered sufficiently early usually receive fee cards approximately three weeks prior to the opening of the Quarter. *It is to the advantage of all*

students to register as early as possible, since the size of many sections is limited and they are completely filled early during the registration period.

Applicants presenting themselves after the opening of the Quarter can be admitted only for exceptional reasons and by action of the Executive Committee of the College. In general, a student who is permitted to enter after the close of the first week of a Quarter will be given a schedule diminished by one full course below the normal requirement for that student.

FEES AND EXPENSES

Registration is not complete until all fees have been paid. No student will have any privileges in the classes or laboratories until all fees and deposits are paid.

Since all fees are due and payable as a part of the student's registration, before the day designated in the University Calendar for classes to begin, no person should come to the University for registration without money sufficient to cover all of his fees and deposits.

A penalty of $5.00 for each succeeding day or fraction thereof will be assessed for failure to comply with this rule except in the case of a new student granted permission by the Dean of his College to register after the opening of the University.

1. Matriculation fee (non-returnable)
   Required of every student on *first admission to the University* $15.00
2. Incidental fees
   Incidental fees do not vary with the number of courses taken
   Quarter fee for a resident of Ohio 20.00
   *Quarter fee for a non-resident of Ohio 70.00
3. Special fees
   (a) Ohio Union (Men) (Each Quarter) 1.00
   Women's Union (Women) (Each Quarter) 1.00
   The Union fees entitle the students to all the privileges of the Unions
   (b) Student Activities and Medical Service Laboratory fee .. 2.00
   Required of all students each Quarter; to be used in support of Student Government Activities and the Student Medical Service
   (c) Library Laboratory fee 1.00
   Required of all students each Quarter
   (d) Physical Education Laboratory fee 2.00
   Required each Quarter of all students taking gymnasium work. It includes locker and towel service
   (e) Swimming fee 1.00
   Students enrolled in swimming classes are required to pay a Natatorium deposit for the use of bathing suits
   (f) Laboratory Breakage deposit—amount varies with course ..... from 1.00 to 20.00
   Students are required to pay for all materials consumed in laboratory work. The laboratory deposit must be made at the time of registration before the student may enter the laboratory. All laboratory supplies are sold to students at the Laboratory Supply Store, Chemistry Building, and charged against the deposits (See page 20). Instructors shall not permit

* Non-resident fee. See page 19.

students to engage in laboratory work unless the student has shown a receipt from the Bursar for deposit paid

(g) Deposit for military uniform for Freshmen ..... (approximately) 25.00

NOTE: When checks given for payment of fees are not paid on presentation at bank, registration will be automatically cancelled and receipts given considered null and void.

NON-RESIDENT FEE

Every student who is not a legal resident of the State of Ohio is required to pay a non-resident fee of $50.00 each Quarter (or $25.00 each term of the Summer Quarter) of his residence in the University in addition to other University fees. The burden of registering under proper residence is placed upon the student. If there is any possible question of his right to legal residence the matter should be brought to the attention of the Registrar and passed upon, previous to registration or the payment of fees. Any student who registers improperly under this rule shall be required to pay not only the non-resident fee but shall be assessed a penalty of $10.00. Students who do not pay this fee within thirty days after they have been notified that the non-resident fee has been assessed against them, will have their registration in the University cancelled.

No person shall be considered eligible to register in the University as a resident of the State of Ohio unless he has been a *bona fide* resident in the State twelve consecutive months next preceding the date of his original enrollment, and no person shall be considered to have gained or lost a residence in this State for the purpose of registering in the University by any conduct of his own while he is a student in the University, unless after attendance at the University for one year it can be clearly established by the student that his previous legal residence has been abandoned and a new one established in Ohio for purposes other than merely attending the University; but persons whose legal residence follows that of other persons, as hereinafter provided, shall be considered to have gained or lost legal residence in this State for such purpose while students in the University according to changes of legal residence of such other persons, except that such legal residence shall not be considered t· be so gained until twelve months after such other person becomes a legal resident of this State.

MINORS: The residence of minors shall follow that of the legal guardian, regardless of emancipation; but in case a resident of Ohio is appointed guardian of a non-resident minor, the legal residence of such minor for the purpose of this rule shall not be considered to be established in the State of Ohio until the expiration of twelve months after such appointment.

WIVES: The residence of wives shall follow that of husbands.

ALIENS: Aliens who have taken out their first citizenship papers and who have been residents of Ohio for twelve months next preceding the date of their original enrollment in the University, shall be regarded as eligible for registration as residents of Ohio.

TEXTBOOKS

Textbooks. Students should not purchase textbooks until they are advised by the instructors of their respective classes.

ROOM AND BOARD

Room and Board. (See Living Arrangements, page 21.)

RETURN OF FEES ON WITHDRAWAL

Fees are returnable in case a student withdraws on account of sickness or for other causes entirely beyond his control, if such withdrawal is made during the first thirty days of the Quarter. Students withdrawing under request from the University are not entitled to any return of fees. Permission to withdraw, given in writing by the Dean of the College, must be presented to the Bursar within this thirty-day period. Ordinarily no more than one-half of the fees paid will be refunded; if the case has exceptional circumstances it should be referred to the President for his judgment.

No fees will be returned in case of withdrawal of students until thirty days have elapsed from the date of withdrawal.

If fees are paid under mistake of law or fact they are returnable in full.

Fees are not returnable except as provided in this rule.

On Laboratory Deposits. If a student is forced to withdraw from a laboratory course during a Quarter, he must first secure permission from his Dean.

No portion of a laboratory deposit of $5.00 or less shall be returned, unless the course is officially dropped by the student and request for refund presented within thirty days after the payment of the deposit.

On a laboratory deposit of $6.00 or more the unexpended part of the deposit is returnable if called for on or before the close of the Spring Quarter of the fiscal year in which the deposit has been made.

An order for refund for the unexpended portion of the deposit may be obtained by applying at the Laboratory Supply Store, Chemistry Building. The unexpended part of the deposit will be paid at the Bursar's Office on presentation of the order for refund.

SPECIAL FEES—PENALTIES

PENALTY FOR ABSENCE DURING FRESHMAN WEEK

Freshmen must be present on the opening date, September 25, for the first meeting, scheduled at 3:00 p. m. A penalty of $5.00 for each day of absence will be imposed. This is the usual penalty for late registration. The exercises of Freshman Week will be of the greatest benefit to the Freshmen and attendance upon them is required. All cases of failure to appear on this day or to be present at any of the exercises of Freshman Week will be reported to the President for action.

PENALTY FOR FAILURE TO REGISTER WITH THE DEAN OF WOMEN

Every woman student must register with the Dean of Women at her office in Pomerene Hall at the beginning of each Quarter. Registration closes on Thursday following the opening of the Quarter. Students who are residents of Columbus are requested to register on the day preceding the opening of classes. A penalty of $5.00 will be assessed for failure to comply with this rule.

PENALTY FOR FAILURE TO KEEP APPOINTMENT FOR PHYSICAL EXAMINATION

A penalty of $1.00 will be assessed for failure to keep appointment for Physical Examination or for change in date of Physical Examination.

FEE FOR LATE FILING OF ELECTION CARDS

A student who fails to file his election card within the required time (see page 17) must pay a penalty of $1.00 for each day of delay, the maximum fine being $5.00.

FEE FOR CHANGES IN APPROVED ELECTION CARDS

Changes in approved election cards will be made only upon the approval of the Dean and payment of $1.00 for each change involved unless such payment is waived by the Dean approving the change.

FEE FOR CHANGES IN APPROVED SCHEDULE ASSIGNMENTS

Changes in approved schedule assignments will be made only upon the approval of the Registrar and the payment of $1.00 for each change involved unless such payment is waived by the Registrar.

COST OF A YEAR'S WORK

One of the most perplexing questions that confronts a prospective student is what the course is going to cost him a year.

The total cost of a year's work—three Quarters, will depend considerably upon the course pursued. In some courses, such as chemistry, considerable material is used by the student, and this must be paid for by him. The cost of books is an item which varies greatly with the course.

In order to furnish information, there is listed below an estimate of the average payments required by the University for the freshman year and the estimated cost for room and board at a safe price. These two items are sometimes reduced slightly where two students occupy the same room and where boarding clubs are economically managed. Fees to the University are paid at the beginning of each Quarter.

ESTIMATE OF EXPENSES

Matriculation Fee (non-returnable)	$ 15.00
Incidental Fee	60.00
Ohio Union	3.00
Activities and Medical Service Laboratory Fee	6.00
Library Laboratory Fee	3.00
Physical Education Laboratory Fee	6.00
Deposits to cover laboratory materials and breakage	30.00
Deposit to cover uniform (approximately)	25.00
Books	30.00
Board—36 weeks at $4.50 a week	162.00
Room rent at $10.00 a month	90.00
Total	$430.00

NOTE: In order to meet all the necessary expenses of registration, deposit for uniform, books, and other expenditures incident to securing a room and board, a student should come prepared to spend from $75 to $100 during the first ten days of a Quarter. After that period, his board and room rent will constitute the major part of his expenses.

LIVING ARRANGEMENTS

The President of the University has the authority to supervise living arrangements of students not residents of the city of Columbus and to order the immediate withdrawal of any student from any boarding or lodging house in which the surroundings are undesirable.

ROOMS AND BOARD FOR MEN

The University possesses only two dormitories for men, the Tower Club and the Buckeye Club. Furnished rooms can be obtained at prices varying from $7.00 to $15.00 a month (single) and $10.00 to $20.00 (double). The cost of the table board in the clubs and restaurants near the University is from $4.00 to $6.00 a week. Board can be secured at the Ohio Union, as well as at Pomerene Hall, at reasonable prices.

Board with furnished rooms can be obtained in private families within convenient distance from the University at rates varying around $7.00 a week.

MEN'S DORMITORIES

The Tower Club and the Buckeye Club were organized for men who are in great need of financial assistance.

Applicants with unusually good records in the high school and advanced students who have made unusually good records in college are eligible for consideration.

The Clubs are run on a cooperative dormitory plan with very simple accommodations. The Club fee is $1.00 a Quarter for each man. Board is available at approximately $2.90 a week.

Applications should be sent to B. L. Stradley, University Examiner.

MEN'S HOUSING BUREAU

The absence of dormitories for men at the Ohio State University, with the exception of the Tower Club and the Buckeye Club, causes the men students to reside in private rooming houses in the University district. In order to assist the students (especially those entering for the first time) in finding desirable rooms at the greatest saving, the University has created the Men's Housing Bureau, located in the office of the Dean of Men, first floor, Administration Building.

Classified lists of rooms available for every student and for any number of students are always available at this office. Boarding houses are likewise listed.

If the student signs the "Rooming House Agreement" he shall be expected to be responsible for the rental price of the room as specified in the agreement, unless he can present satisfactory reasons to the Men's Housing Bureau for moving out before the expiration of that period, or, unless he can secure a satisfactory substitute. If he moves out before the expiration of the Quarter without presenting a satisfactory excuse he shall forfeit one month's rent. The signing of such agreement is optional.

The University warns students not to rent rooms which have not been placed on the approved list by the Men's Housing Bureau. Anyone renting a room which is not on the approved list does so at his own risk.

WOMEN STUDENTS

Every woman student, whether undergraduate or graduate, must register with the Dean of Women at her office in Pomerene Hall during the first four days of each Quarter. The exact dates of registration will be fully announced each Quarter.

NOTE: A penalty of $5.00 will be assessed for failure to comply with this rule.

LIVING ARRANGEMENTS FOR WOMEN

All living arrangements for women are under the supervision of the Dean of Women and must be submitted to her before completion. Students wishing to make living arrangements should write to the Dean of Women who will send full information as to the various plans.

Under the rules of the Faculty, all Freshman women are expected to room and board in the University Residence Halls.

Students other than Freshmen may live in University operated residence halls, in privately operated residence halls, in University houses, in sorority houses, in private homes working for room and board, or in residences with relatives.

UNIVERSITY RESIDENCE HALLS FOR WOMEN

The University has three modern Residence Halls under its jurisdiction, Oxley, Mack, and Neil Halls. All three Halls are governed by student government with the advice and supervision of the House Superintendent. Booklets describing these residence halls will be sent upon request to the Superintendent. Students living in these residence halls shall not change to an outside residence at any time during the year without the previous consent of the Dean of Women.

PRIVATELY OPERATED RESIDENCE HALLS AND UNIVERSITY HOUSES FOR WOMEN

Westminster Hall, 52 Fifteenth Avenue, under the supervision of the Presbyterian Church and St. Hilda's Hall, 169 West Eleventh Avenue, under the supervision of the Episcopal Church are open as places of residence to women students. Booklets describing Westminster Hall and St. Hilda's Hall will be sent upon request to the Superintendents. There are also about twenty-five University Houses, privately owned and operated, under the supervision of the Dean of Women. Full information and prices may be obtained upon request to the Dean of Women.

PART-TIME EMPLOYMENT

FOR MEN

The University cannot promise work to students who expect to work their way through college. Many students find work in private families, in offices, and in various occupations, by means of which they defray a portion of their expenses. A person of ability and energy who is master of a trade, or who can do good work of any kind, can generally find employment, but prospective students are cautioned against depending wholly upon such uncertain sources of income.

Students should understand that where they attempt entire or partial self-support they should lengthen the term of study by applying for a part-time schedule. Special arrangement of class hours to accommodate a student's outside work is not possible. All outside work should be arranged with due regard to University obligations and classes which may occupy the Saturday morning hours as well as the late afternoon hours.

An employment bureau is maintained by the Ohio Union, where the names of those seeking work and of those desiring workers are recorded. Students desiring work should apply to the Employment Secretary, Room 6, Ohio Union.

FOR WOMEN

Approximately twenty per cent of the women students earn a part of their University expenses either by part-time employment during the college year or by full-time employment during the summers. Counsel and cooperation in seeking such opportunities are heartily rendered by the office of the Dean of Women in Pomerene Hall.

Comparatively few students, however, can successfully carry on a full schedule of courses and at the same time earn any large proportion of their expenses. The schedule should be reduced to fit the student's limited time for study and recreation. New students should on entering come with sufficient funds to meet all expenses until they have had time to become adjusted and to demonstrate their caliber as students. Even then they should not count too confidently on profitable work. As a rule students seeking employment outnumber opportunities for employment. In many cases a student receives her room or room and board for her services and is not given any money compensation.

Students who must plan to earn money during the college year should ask the Dean of Women's Office for advice well ahead of the time that their schedule of courses must be made out. Otherwise they may find themselves in difficulty.

Special arrangement of class hours to accommodate a student's outside work is not possible. All outside work should be arranged with due regard to University obligations and classes which may occupy the Saturday morning hours as well as the late afternoon hours.

RULES AND REGULATIONS

For rules and regulations concerning student responsibility and procedure, see the *University Rules and Regulations for Students*, a copy of which may be obtained from the Registrar.

THE MARKING SYSTEM AND POINT SYSTEM

The grade marks given in the several Colleges of the University are: A—Excellent; B—Good; C—Average; D—Poor; E—Failed.

K (Credit) shall be used for work credited from other institutions and by the University Examiner only.

Em (Examination) credit shall be used to indicate that the credit given is for work not done in residence.

A value in "Points" is assigned to each of these grades as follows:

For each hour of A grade, 4 credit points shall be allowed.

For each hour of B grade, 3 credit points shall be allowed.

For each hour of C grade, 2 credit points shall be allowed.

For each hour of D grade, 1 credit point shall be allowed.

For each hour of K credit, no credit points shall be allowed.

For each hour of Em credit, no credit points shall be allowed.

The grade of E receives no credit either in hours or points.

The mark E cannot be removed by re-examination. (For removal of failures see page 25.)

POINTS REQUIRED FOR GRADUATION

(See page 32.)

LOW STANDING

DISMISSAL AND PROBATION FOR LOW STANDING

At the end of each Quarter, any student who has failed to earn a point-hour ratio of at least .65 on the number of credit hours for which he was scheduled shall be dismissed from the University. Any student, not dismissed under the above rule, who has failed to earn a point hour ratio of at least 1.30 on the number of credit hours for which he was scheduled that Quarter shall be placed on probation.

The period of probation shall extend through one Quarter of residence. If a student has been twice placed on probation, he shall not be placed on probation again but instead shall be dismissed from the University.

The Dean or the Executive Committee of a College shall have power to place a student on probation at any time for a definite period when in their judgment his scholastic standing is unsatisfactory. In every case of probation the Dean of the College shall notify both the student and his parents or guardian.

These rules do not apply to students registered in the Colleges of Dentistry, Law, and Medicine. The faculties of these colleges are empowered to enact appropriate rules regulating this matter.

DISMISSAL OF STUDENTS ON PROBATION

At the end of any Quarter, any student who is on probation shall be dismissed from the University if he has failed to earn a point-hour ratio of at least 1.30 on the number of credit hours for which he was scheduled. Notice of such dismissal shall be sent by the Dean both to the student and to his parents or guardian.

DISMISSAL FOR DEFICIENCY IN POINTS

Any student who has been registered in this University for six Quarters and has not earned a cumulative point-hour ratio of at least 1.7 on the number of credit hours for which he has been scheduled shall be dismissed from the University. Moreover, a cumulative point-hour ratio of at least 1.7 on the student's entire record shall be maintained throughout subsequent Quarters unless there is a transfer to another college.

A student entering this University from another institution, as far as the applicability of this rule is concerned, will be considered as if his entire residence had been at this University, but his point-hour ratio will be computed upon the work done at this University. No such student, however, shall be dismissed under this rule until he has completed two Quarters of residence. These rules shall not apply to students registered in the Colleges of Dentistry, Law, and Medicine. The faculties of these colleges are empowered to enact appropriate rules regulating this matter.

DISMISSAL BY SPECIAL ACTION

In cases not covered by the foregoing rules, if at any time the preparation, progress, or success of a student in his assigned work is deemed unsatisfactory, the Executive Committee of the College shall have power to dismiss him from the University.

REMOVAL OF FAILURES

FAILURE IN A REQUIRED COURSE

At his first opportunity a student must repeat in class a required course in which he has failed, unless the Executive Committee of the College authorizes a substitute course.

GRADUATION

RESIDENCE REQUIREMENT FOR A DEGREE

A candidate for a degree must secure credit by regular class enrollment for the full work of three Quarters. This work must be in courses offered by the College recommending the degree, and must be secured while in residence at this University.

Ordinarily the student must be enrolled in the college recommending the degree while completing the last two Quarters required of him, but the Executive Committee of that college may, for sufficient reason, waive compliance with this requirement to the extent of not more than one Quarter's work in favor of a student who has done six full Quarters of satisfactory residence work at this University, including forty-five Quarter-credit hours completed during the junior and senior years.

APPLICATION FOR A DEGREE

A candidate for a degree must file an application for the degree with the Secretary of his College or the Dean of the Graduate School in accordance with the rules prescribed by his College or the Graduate School.

POINTS REQUIRED FOR GRADUATION

(See page 32.)

COMMENCEMENT—CONVOCATION

A special Convocation or Commencement shall be scheduled at the close of each Quarter for the conferring of degrees upon candidates who have fulfilled all the requirements of their respective courses.

ATTENDANCE AT CONVOCATION EXERCISES

All candidates for degrees are required to be present at their graduation convocation unless excused by the President.

NEW CURRICULUM

(For students entering the Freshman class in the Summer Quarter of 1932 and thereafter)

FIRST AND SECOND YEARS—THE JUNIOR DIVISION

During the first two years of his course, designated as the Junior Division, the student is expected to lay a broad foundation for later specialization or for an immediate career. Some students will not care to secure the Bachelor of Arts degree and will want to complete their liberal studies in the Junior Division. Provided these students fulfill the requirements of the Junior Division with a cumulative point ratio of at least 1.7, they will be granted a "Certificate in Liberal Studies," if they desire to apply for it. To enter the Senior Division, completion of the Junior Division requirements with a cumulative point ratio of at least 1.8 is required.

To secure a broad and liberal foundation in the Junior Division, the new curriculum allows a wide latitude for personal choice. If the student has the average number and distribution of high school entrance units, the required courses in the Junior Division will not occupy more than two-thirds of the student's time. The high school course is a fundamental part of the student's education. Accordingly the courses which are offered for admission to the College and the student's mastery of their subject matter are taken into consideration in determining the requirements for each student in the Junior Division.

In order to emphasize as much as possible the proficiency of students rather than the taking of courses, a student can arrange with the chairmen of the various departments in the College to take proficiency tests covering work done either by exceptionally good preparation in high school in a subject continued in college, or by study beyond and outside the regular academic schedule of the student in college. Hours credit (Em credit) is given for the work thus acceptably covered by examination. The student who is able to pass these tests may reduce the hours requirements by a considerable amount and may also be able to reduce the number of hours in the required courses in the Junior Division, if the work examined applies on one of the required sequences. When this is true, the amount of elective work which the student can take is increased. The student whose grade is not adequate to secure (Em) credit may, however, be certified as eligible to go on with the succeeding course if his grade is considered sufficient for the purpose of satisfying the prerequisite for the next higher course. The proficiency tests for Freshmen entering in the Autumn Quarter will be given in Freshman Week. Students passing the tests and securing thus a reduction of required hours may then plan their schedules in consultation with the Junior Dean.

THE REQUIREMENTS

The normal academic load in the Junior Division is fifteen hours a Quarter, or ninety hours for the two years. This does not include the fixed requirements in military science, physical education, and hygiene.

There are four requirements in the Junior Division, as follows:

I. English
II. Foreign Language
III. Natural Science
IV. Social Science

I. English

(A) A student must demonstrate his ability to write clear and correct expository English.

This requirement may be met by passing a proficiency test to be given once each Quarter by the Department of English, or by passing English 401 with a grade of not less than "C." Passing the proficiency test gives college credit (Em credit).

Admission to the Senior Division of the College of Arts and Sciences requires a final grade of "C" or better in English 401. Students whose final grade is lower than "C" should immediately consult with the college office. Such students, as well as those whose English has been reported as unsatisfactory in two non-composition courses in the College, shall take a certification test in the first or second Quarter preceding that in which they expect to enter the Senior Division. If the student passes this test with a grade of at least "C" he shall be certified as adequately proficient in English 401. The student who does not pass this test with a grade of "C" or better shall be required to repeat English 401 with a passing grade before resubmitting to the certification test. If, however, his grade is "C" or better, he may be certified as proficient without taking the certification test. (Note: According to the University rules, the student will receive no credit for this second composition course.)

During the first two class sessions in English 401, writing tests will be given to determine the ability of students to use the English language effectively. Students found with less than expected ability will be dropped from the regular classes and assigned to review sections in English fundamentals, without credit, for one Quarter. A fee of $5.00 will be charged to cover the cost of tutorial instruction.

(B) All students are required to take one general course in English literature (English 430 or its equivalent).

The Department of English may offer a proficiency test in this subject, the passing of which will relieve the student of this requirement, and admit him to more advanced courses in the department.

II. Foreign Language

A student in the Junior Division must demonstrate either (A) a reading knowledge of one foreign language or (B) a working knowledge of two foreign languages.

(A) Reading knowledge of a foreign language is defined as that ability to read which may reasonably be expected in a student who has passed the first six courses offered in that language in the College. Reading knowledge requirement may be met in the following ways:

1. By passing with a grade of "B" or better the fifth course in any language offered in the College; or by passing an additional course to which the equivalent of the first five courses is prerequisite.

2. By passing a proficiency test, to be given by the Department concerned once each Quarter, requiring a knowledge of the language equivalent to that required to pass the final examination in the sixth course offered in the language in the College.

NOTE: By the term "course," a five-hour course, or a combination of courses totalling at least five hours, is meant.

(B) Working knowledge of a foreign language is that ability to read which may be expected in a student who has passed the first four courses offered in a language in the College. Working knowledge requirement may be met in the following ways:

1. By passing with a grade of "B" or better the third course in any two languages offered in the College; or by passing additional courses to which the equivalent of the first three courses is prerequisite.

Students with three credits in a language in high school may take a proficiency test to determine whether their knowledge of the language is adequate to satisfy the requirement for a working knowledge in that language.

2. By passing a proficiency test, to be offered by the Department concerned once each Quarter, requiring a knowledge of the languages equivalent to that required to pass the final examination in the fourth course in such languages taken by the student in the College.

A year of high school work is considered equivalent to a Quarter of work completed in college and a student will be admitted to advanced courses in this University on that basis.

Students who present language credits of less than four units in one language from high school should usually continue that language in college, both in order to go further in one language, and to reduce the language requirements in college. Those who choose to continue a language studied for four years in high school can very materially reduce the language requirements in college and thus at an earlier date be able to enter into the field of free electives.

III. Natural Science

All students in the Junior Division are required to complete a sequence of a year's connected work (15 credit hours) in science.

The satisfactory completion of one of the following sequences meets this requirement:

(A) Botany 401-402-405
(B) Botany 401-402-406
(C) Botany 401-402 and Zoology 403
(D) Chemistry 401-402-403
(E) Chemistry 411-412-413
(F) Chemistry 401 or 411, Chemistry 402 or 412, and Physics 509
(G) Geology 401-402-411
(H) Geology 401-402-412
(I) Geology 401-411-402
(J) Mathematics 421-422-423
(K) Mathematics 432-431-433
(L) Astronomy 431-432-433
(M) Astronomy 500-501-502 (Not open to Freshmen)
(N) Physics 411-412-413
(O) Physics 411-412 and Astronomy 501
(P) Physiology 403-404-500 (Not open to Freshmen)
(Q) Zoology 401-402-403
(R) Zoology 401-402 and Entomology 550 (Not open to Freshmen)
(S) Zoology 401-402-509 (Not open to Freshmen)

A student who has had neither chemistry nor physics in high school must elect five hours from one of these subjects, in addition to the completion of a sequence, unless he elects a sequence in one or the other of these subjects to fulfill his requirement.

A student who has not had a year of biological science in high school must take five hours in either Botany, Physiology, or Zoology in addition to another sequence unless he elects a sequence covering this requirement.

IV. Social Science

Every student in the Junior Division is required to complete a sequence of a year's connected work (15 credit hours) in social science.

The satisfactory completion of one of the following sequences meets the requirement:

(A) History 407-401-402
(B) History 401-402 and Political Science 402

(C) History 401-402 and Economics 503
(D) History 403-404 and Political Science 401
(E) History 408-409-410
(F) Political Science 401-402-403 (Not open to Freshmen)
(G) Economics 401-402-509 (Not open to Freshmen)
(H) Economics 401-402-520 (Not open to Freshmen)
(I) Sociology 401-501-402 (Not open to Freshmen)
(J) Sociology 501-401-402 (Not open to Freshmen)
(K) Sociology 401-402-505 (Not open to Freshmen)
(L) Sociology 401-402 and Philosophy 405 (Open to interested and qualified Freshmen with the special permission of the Junior Dean)
(M) Philosophy 402 and Economics 401-402 (Open to interested and qualified Freshmen with the special permission of the Junior Dean)
(N) Philosophy 401 and History 401-402 (Open to interested and qualified Freshmen with the special permission of the Junior Dean)
(O) Philosophy 402, 405, 401 (Not open to Freshmen)

A student who has not had one year of American History in high school must take one Quarter of this subject in addition to the social science requirement unless he elects the sequence in American History to fulfill the college requirement.

REPEATING HIGH SCHOOL WORK

If a student enters a course that presupposes a unit in the high school in the same subject (foreign languages, Chemistry 411) and does not make satisfactory progress, the Dean of his own initiative, or upon recommendation of the instructor concerned, may transfer the student to a more elementary course. Upon completion of the latter course the student will receive 3 hours credit instead of 5 hours.

OTHER FIXED REQUIREMENTS

In addition to the required distribution of studies among the four groups, all students must meet the following requirements:

(1) **Military Science** is required of all men entering under twenty-five years of age during the first six Quarters, with a credit of one hour each Quarter.

(2) **Physical Education** is required of all men during the first three Quarters, with a credit of one hour each Quarter, and of all women during the first six Quarters, with a credit of one hour each Quarter.

(3) **Hygiene** is required of all students during the first year and may be taken in any one of the three Quarters, with a credit of one hour.

Students who present 90 hours of academic credit from other universities are exempt from these requirements, but must have the same number of credit hours for graduation, viz., 190, that are required of other students. See Student Rule Book.

SENIOR DIVISION COURSES FOR SOPHOMORES

A student finishing his last Quarter in the Junior Division whose full time is not required to complete the requirements of that division may, with the approval of the Dean, select certain courses to be credited in the Senior Division after his successful completion of all the requirements of the Junior Division. The student should apply for this privilege at the college office.

POSTPONEMENT OF ONE REQUIREMENT

As a general rule, students are expected to complete the requirements in the Junior Division, but for adequate reason, a petition for permission to defer one requirement or a part of one requirement into the Senior Division may

be approved. In such cases, where introductory courses for Senior Division students exist, the student should take those courses rather than the corresponding courses in the "400" numbers.

AMOUNT OF WORK IN THE JUNIOR DIVISION

The normal amount of work required in each Quarter of the first two years is 15 hours exclusive of military science, physical education, and hygiene. After a Quarter of residence in the Junior Division, students doing superior work may be permitted to carry an additional course after obtaining the special permission of the Junior Dean or the Student Counselor.

WORK NOT SPECIFIED IN THE REQUIREMENTS

During the first two years, the average student will have 30 hours that he may devote to work not required, if he so desires. He may take additional subjects within one of the requirements, or more advanced courses in the subjects he has already begun, or he may choose a subject not enumerated in the requirements. Choice of subjects is limited to courses listed in this bulletin. Exceptions to this rule may be made upon the approval of the Executive Committee.

Among the subjects not specified in the Junior Division requirements but open either to Freshmen or to Sophomores are the following: open to Freshmen and Sophomores, geography, fine arts, philosophy (open to Freshmen with special permission of the Junior Dean), phonetics, public speaking, psychology, music; open to Sophomores only, accounting, home economics, Italian, journalism, mineralogy, physiology.

GENERAL REQUIREMENTS FOR THE CERTIFICATE IN LIBERAL STUDIES

1. Residence to the extent of at least three Quarters shall be maintained in The Ohio State University, with credit for at least 45 academic hours. The two Quarters preceding the granting of the certificate shall be in residence within the College of Arts and Sciences and academic credit to the extent of 30 hours must be obtained while enrolled in this College.

2. The ninety hours of academic credit presented for the Certificate in Liberal Studies must be entirely in courses which are listed in the Bulletin of this College.

3. A student must be in good standing in the University at the time he completes the requirements for the Certificate.

4. Application shall be made for the Certificate at least one Quarter before the student is eligible to receive it.

5. All requirements of the Junior Division must be satisfactorily completed.

6. A point ratio of not less than 1.7 must be made on the work of the Junior Division.

7. A fee of $3.00 must be paid to the Bursar one week prior to issuance of the Certificate.

COURSES OPEN TO FRESHMEN

The following is a complete list of the courses open to Freshmen during the first and second Quarters. During the third Quarter of the freshman year, a student may pursue any course which is the normal continuance within the department of a course already completed. Courses which are not open to Freshmen, but which appear in a freshman sequence may be elected during the freshman year only as a part of such sequence. No courses in the "600" group may be taken under this provision, nor, in general, by second-year students.

In the Required Groups:

GROUP I—ENGLISH.

English 401; 430.

GROUP II—FOREIGN LANGUAGES.

French 401-402; 403-404 (for students who enter with two units in French); 413-414 (for students who enter with four units in French).
German 401-402; 403-404 (for students who enter with two units in German); 506, 510-550 (for students who enter with four units in German).
Greek 401-402-403.
Latin 401-402; 403-405 (for students who enter with two units in Latin); 406 (for students who enter with four units in Latin).
Spanish 401-402; 403-404 (for students who enter with two units in Spanish); 413-414 (for students who enter with four units in Spanish).

GROUP III—NATURAL SCIENCES.

Astronomy 431-432-433.
Botany 401-402; 405, 406.
Chemistry 401-402-403; or 411-412-413 (for students who enter with one unit in Chemistry).
Geology 401-402; 411, 412.
Mathematics 421-422-423; 431-432-433 (for students entering with two and one-half units in Mathematics).
Physics 411-412-413.
Zoology 401-402; 403.

GROUP IV—SOCIAL SCIENCES.

History 407; 401-402; 408, 409, 410; 403-404.
Philosophy 401, 402, 405 (by special permission of the Junior Dean).

Other Courses Open to Freshmen:

Geography 401-403; Fine Arts 401-402-403, 421, 423, 431, 479; Phonetics 401; Psychology 401, 402; Public Speaking 401-402; English 440 and 450; Music 423, 424, 425, 426.

NEW CURRICULUM
THIRD AND FOURTH YEARS—THE SENIOR DIVISION

ADMISSION TO THE SENIOR DIVISION

A student is admitted to the Senior Division when he has successfully completed the requirements of the Junior Division, including 90 hours of academic work and hygiene, military science, and physical education, with a cumulative point ratio on the work undertaken of at least 1.8.

Students not dismissed under the University rules, but who have failed to make the required point ratio of at least 1.8 may remain in the Junior Division. When at the end of any Quarter their cumulative point ratio on work undertaken is raised to 1.8 they may advance to the Senior Division.

REQUIREMENTS OF THE SENIOR DIVISION

Requirements in the Senior Division for the Bachelor of Arts degree are as follows:

I. Ninety hours of academic credit, of which 60 hours shall be in courses numbered "500" or above.

NOTE: For women students, 93 academic hours are required in order to have the 190 credit hours required for graduation. Students excused from

military science, physical education, and hygiene must make up such deficiencies in credit hours by carrying additional academic courses.

II. A cumulative point-hour ratio of 1.8 on the work undertaken in the Senior Division.

III. A major consisting of not less than 40 hours of related work, nor of more than 60 hours in a single department, with a cumulative point ratio of not less than 2.25. *The major is to be made up only of courses taken in the Senior Division, which have the approval of the major adviser.*

IV. The required Senior Survey course.

DETAILED REQUIREMENTS

AMOUNT OF WORK IN THE SENIOR DIVISION

The normal amount of academic work required is 15 or 16 hours each Quarter. In the Senior Division, 30 hours of work are permitted in courses numbered in the "400" group, but a minimum of 60 hours is required in courses numbered in the "500" or "600" groups.

Students who have made a record averaging "B" or better during the second or third year may take not to exceed 20 hours as long as they maintain their record at that level, but they may not carry more than five different courses unless permission is first obtained. Students whose records are better than a "C" average may take not to exceed 18 hours of academic work as long as they maintain this standing.

POINT RATIO

To be eligible for the B.A. degree at the completion of the requirements of the Senior Division, a student must have a cumulative point ratio of 1.8 on the work of the Senior Division. This ratio is determined on the work of the Senior Division figured separately from the other work taken in the College.

THE MAJOR

While enrolled in the Senior Division, the student will center a considerable portion of his attention in some one general field of knowledge designated as the major.

The field of concentration may consist wholly of subjects offered in one department, or, with the approval of the student's major adviser, it may comprise courses found in several allied departments. When courses in more than one department are used to fulfill the major requirement, the major adviser submits to the College office a written statement of such courses. All courses comprising the major must be approved by the major adviser.

The *minimum requirement* for the major is not less than forty hours of related work, *all of which must be taken in the Senior Division.*

The *maximum amount* of work allowed in any one department while in the Senior Division is sixty hours.

Students must maintain a point ratio of 2.25 in the courses comprising their major.

ADVISERS FOR THE MAJOR

Students expecting to enter the Senior Division must declare their major during the third Quarter of the Sophomore year. Forms for the purpose are available at the College office and the staff will be glad to assist students in making their choice if advice is needed or desired.

After filing the declaration of the major, the Dean will appoint a member of the faculty who is interested in the student's field of interest as the student's major adviser. The College office will notify the student and the adviser of the appointment. *The student must consult with his major adviser concerning the program of studies which he desires to follow.*

Before conferring with the adviser, the student should outline for himself a tentative program for the succeeding six Quarters. He should consult the *Bulletin* of the College to see that proper prerequisites are arranged and the time schedule to avoid conflicts of time. The adviser is supplied with forms which are to be filled out and returned by him to the College office and from these statements the student's schedule will be approved by the college staff. If, for any adequate reason, the student is unable to secure the adviser's approval, the Dean or the Secretary of the College may temporarily act as major adviser.

For sufficient reasons, the major may be changed during the junior year, but a change of major will not be permitted during the last three Quarters prior to graduation except by special action of the Executive Committee of the College. For this reason, care should be taken in the choice of the major and serious consideration should be given the matter while in the Junior Division.

SENIOR ARTS SURVEY

One of the following general courses is required of each student in his Senior year, in order to afford him some insight into the progress of thought in a great province of life to which he has given relatively little attention during his undergraduate work.

(a) **Foundations of Contemporary Civilization (Arts Survey 605).** Five credit hours. One Quarter. Autumn or Winter. This course is required of all students majoring in subjects falling within the field of biological and inorganic sciences, mathematics, and psychology.

(b) **Development of Modern Science (Arts Survey 608).** Five credit hours. One Quarter. Autumn or Winter. This course is required of all students majoring in subjects other than the natural sciences.

REQUIREMENTS FOR GRADUATION

To qualify for graduation from the College of Arts and Sciences, the candidate must meet the following requirements:

(1) A student must be in good academic standing at the time he is recommended for his degree.

(2) He must comply with all requirements described on pages 26 to 34.

(3) At least 90 hours must be in courses not open to Freshmen (page 30), of which at least 60 hours must be in courses for advanced undergraduates (numbered 500 or above).

(4) He must have not less than 45 credit hours and 90 credit points earned in this University and described in this *Bulletin*. (See Point System, page 24.)

(5) The last two Quarters of work counted toward the degree (30 credit hours) must be taken in residence in the College of Arts and Sciences of The Ohio State University.

(6) The application for a degree must be filed with the Secretary of the College at least two weeks prior to registration for the Quarter that is to conclude the applicant's course. The proper blank form may be secured from the Secretary. The diploma fee must be paid one week prior to the Convocation at which the degree is to be conferred.

(7) The credit hours must aggregate at least 190 (including the required courses in military science, physical education, and hygiene). The credit points must equal 1.8 times the number of credit hours undertaken, whether passed or failed. (See Point System, page 24.) If, after securing 190 credit hours the student is deficient in points he must take additional courses to secure these points. A student who has been excused from military science, physical educa-

tion, or hygiene will be required to earn academic credit in lieu of the requirements from which he has been excused.

ELECTIVE COURSES IN OTHER COLLEGES OF THE UNIVERSITY

Many courses are offered in other colleges of the University, but not described in this *Bulletin*, that are of interest to certain students of the College of Arts and Sciences, particularly to those who are shaping their studies toward some definite professional end. A limited number of such courses may be carried with credit under the following restrictions:

(1) No such course may be elected until the student has secured credit for two years (90 hours) in the courses offered in the College of Arts and Sciences.

(2) Such electives are limited to a total of 30 hours and generally to 5 or 6 hours each Quarter. In special cases the Executive Committee of the College may permit more than 6 hours in a given Quarter.

(3) Except in rare cases, courses may not be elected in the Colleges of Medicine and Dentistry. Seniors in the College of Arts and Sciences may elect courses in the College of Law for which they have the necessary preparation with the permission of the Secretary of the College of Arts and Sciences. This work is not to exceed a total of thirty hours and will be diminished if the student has other courses outside the College under the thirty-hour rule.

(4) *Students taking the combination curricula described in subsequent pages must confine their electives to the courses of the two colleges concerned, unless special permission to take other courses is granted by the Executive Committee of the College of Arts and Sciences. To secure the best arrangement of his studies a student in a combination course desiring to pursue advanced military science courses should consult the office of the Dean before he begins his third year of college work.*

(5) Students who complete the advanced course in the Reserve Officers' Training Corps (see Department of Military Science) count 18 hours military science toward a degree and may elect not to exceed 12 hours from courses in colleges other than the College of Arts and Sciences.

GRADUATE CREDIT FOR SENIORS

A Senior whose full time is not required for the completion of the work for his baccalaureate degree may select certain courses for graduate credit, *but to do this the permission of the Graduate Council (Room 106, University Hall) must be obtained before registering for the courses.*

DEGREE GRANTED

The degree of Bachelor of Arts is recommended for bestowal upon all candidates who have completed the requirements of the four-year curriculum of the College, and upon all candidates who have completed the requirements of those combination courses designated as Arts-Combination Courses.

HONORS AND DEGREES WITH DISTINCTION

ANNUAL HONOR LIST

Early in the Autumn Quarter of each academic year an Honor List is prepared and published. This list contains the names of all students in the College of Arts and Sciences who have received the grade of "A" in at least half their work and an average of "B" in the other half, for the preceding year.

DEGREES CUM LAUDE

Graduation *cum laude* is awarded on the basis of grades in the entire work offered for the degree, if done in The Ohio State University. Only stu-

dents who present at least 90 Quarter-hours of work done while enrolled in this College shall be eligible. A student will be recommended for the degree of Bachelor of Arts *cum laude*, if he has received the grade of "A" in half of his work and an average of "B" in the other half. The degree Bachelor of Arts *summa cum laude* will be granted to a student whose point ratio is 3.8 or better.

DEGREES WITH DISTINCTION IN SPECIAL SUBJECTS

The aim of degrees with distinction in special subjects is to enable superior students to carry out programs especially adapted to their needs in the latter part of their course and to receive appropriate recognition for superior achievement.

Students will be admitted to candidacy for the degree with distinction in a single subject or a group of related subjects in the Junior year under the following regulations:

Candidates must have made an average of 3.0 points per credit hour in the first two years of college work; they must also have received such grades in the field in which they propose to seek distinction as may be required by the departments concerned.

A student may become a candidate for distinction in special subjects at the time of declaring his major study or at any later time before the beginning of his tenth Quarter. Early application is recommended. The student should apply to the Secretary of the College of Arts and Sciences, who will refer him to a member of the faculty committee on honors, who will cooperate with the student and the departments concerned in determining the candidate's eligibility and in working out an appropriate program for the latter part of his course.

The program of work for distinction should include at least 30 Quarter hours in one subject or 45 Quarter hours in a group of related subjects in the Junior and Senior years. It should provide for a suitable amount of collateral reading, laboratory or research work, which will ordinarily be handled through courses in "Special Problems," "Minor Problems," or the like. A special thesis may be required by the departments concerned.

A candidate for distinction must not fall below "B" in the work presented for distinction, and must maintain an average of "C" in his other work; his candidacy for distinction shall cease at the end of any two Quarters in which he fails to meet these requirements.

In the student's last Quarter a committee from the departments concerned will give the candidate a comprehensive examination on the courses and collateral work presented for distinction, and will recommend him for *distinction* or *high distinction* in his field if they deem him worthy. The examination may be written or oral or both. Successful candidates will be excused from examinations in courses in their field at the end of the Quarter in which the comprehensive examination is taken, and unsuccessful candidates may be so excused at the discretion of the departments. The faculty will recommend that these distinctions be noted on the diplomas.

OLD CURRICULUM

Students enrolled under the provisions of the old curriculum should continue to follow its provisions as they are outlined in the bulletins of previous years. Copies are available for inspection at the college office.

COMBINATION CURRICULA

A great many students desire to secure the degree of Bachelor of Arts as well as a professional degree, but cannot give the full time required for the two courses. To encourage this broadening of professional preparation, various

colleges of the University have cooperated with the College of Arts and Sciences in sanctioning the following combination courses leading to the degree of Bachelor of Arts, and to a professional degree within a reduced period of time. Students entering the College of Arts and Sciences with advanced standing from other institutions who wish to take advantage of these curricula must meet the requirements of these combination courses in every respect. *They must also be enrolled for one full year in the College of Arts and Sciences immediately preceding their transfer to the professional college in which the second degree is sought.* A student enrolled in any of these combination courses must confine his work to the courses offered in the two colleges concerned unless special permission to take other courses is granted by the Executive Committee of the College of Arts and Sciences. Work in advanced courses in Military Science and Tactics is considered as work in another college.

Students who enter the College of Arts and Sciences after June, 1932, and expect to complete a combination curriculum, must conform to the new requirements as found on pages 26-34.

Before deciding to enroll for one of these combination courses, the candidate should advise with the deans of both of the colleges concerned. For many students a master's degree in addition to a bachelor's degree is much more advantageous than two bachelor degrees in different courses.

These curricula are effective only between the respective colleges within The Ohio State University.

ARTS-COMMERCE

FIVE YEARS

Candidates who have received credit for 241 Quarter-hours (including the requirements in military science, physical education, and hygiene), and who have met all the requirements of the College of Arts and Sciences for the degree of Bachelor of Arts, as well as all of the requirements of the College of Commerce and Administration (in any one of its curricula) for the degree of Bachelor of Science, will be recommended for both degrees simultaneously.

Residence in the College of Arts and Sciences. During the first three years of his course, the candidate should register in the College of Arts and Sciences. In the selection of his program of study he must comply with the requirements of the curriculum of the College of Arts and Sciences, as described on pages 26-34, and he must also elect those courses that are prerequisite to the curriculum he intends to follow in the College of Commerce and Administration.

Students entering with advanced credit from other colleges must be in residence in the College of Arts and Sciences of The Ohio State University for at least the last year (45 credit hours and 90 points) of the three years mentioned above.

Double Registration in the Two Colleges. During the last two years of his course, the candidate should register in both Colleges, and have his schedule of courses approved by the Secretary of each College. To secure this double registration, he should apply to the University Examiner.

Requirements in Points and Hours. To be eligible for the degree of Bachelor of Arts, the candidate must have secured credit for 160 hours in courses listed in the Bulletin of the College of Arts and Sciences, at the rate of not less than 1.8 points per credit hour undertaken. This includes the requirements in military science, physical education, and hygiene. He must have a total of 190 hours. Any deficiency in points must be made up by taking additional hours in the College of Arts and Sciences.

To be eligible for the degree of Bachelor of Science, the candidate must have 81 hours in addition to the 160 hours of Arts College work, at the 1.8 points per hour ratio. Any deficiency in these points must be made up by excess work in the courses of the College of Commerce and Administration.

General regulations governing all combination curricula are to be found on page 35.

Degrees. In general the candidate will find it necessary to carry courses in both Colleges throughout the last two years of the combination curriculum, completing the work of both Colleges simultaneously. The two degrees will therefore be conferred at the same time.

ARTS-DENTISTRY

SEVEN YEARS

This course includes the first three years of the curriculum of the College of Arts and Sciences and the four-year curriculum of the College of Dentistry. By fulfilling the conditions described below, the degree of Bachelor of Arts and the degree of Doctor of Dental Surgery may be obtained in seven years.

Residence in the College of Arts and Sciences. During the three years of residence in the College of Arts and Sciences the candidate must meet the following requirements:

(1) He must secure credit for a total of 145 Quarter hours, complying with the requirements for admission to the College of Dentistry and including the requirements in military science, physical education, and hygiene.

(2) No part of the curriculum in Dentistry may be counted as a part of these 145 hours.

(3) These 145 hours must include the Junior Division requirements of the College of Arts and Sciences (pages 26-31) and 45 academic credit hours obtained while enrolled in the Senior Division of the college. Of these 45 hours, at least 25 must be in courses numbered "500" or "600" and at least 25 hours must be in the field of the natural sciences; such work in natural science being considered as a major. The major must be declared during the third Quarter of the sophomore year. A point average of 2.25 must be maintained in the courses comprising the major.

(4) The last full year of his Arts work must be done in the College of Arts and Sciences of The Ohio State University.

Residence in the College of Dentistry. Upon completion of the requirements enumerated in the preceding paragraph, the candidate must register in the College of Dentistry, and at the same time retain his registration in the College of Arts and Sciences. To secure this double registration, application should be made to the University Examiner.

Requirements in Points and Hours. To be eligible for the degree of Bachelor of Arts, the candidate must have secured at least 145 credit hours in courses listed in the Bulletin of the College of Arts and Sciences, including the requirements in military science, physical education, and hygiene, at the rate of not less than 1.8 points per credit hour undertaken. He must also have 45 credit hours (at the 1.8 points per hour ratio) in the first year of the course in Dentistry, making a total of 190 credit hours.

Students may not present in excess of ten hours of "K" credit after the completion of the first two years of Arts work; and if such credit to the amount of ten hours is presented it must be on the records at least two Quarters prior to the completion of the requirements for the professional degree.

Students in good standing who, however, have failed to make the required point ratio on the work of the first year in the College of Dentistry, may make up their deficiency in points by carrying additional courses in the College of Arts and Sciences in order to become eligible for the Bachelor of Arts degree. If they prefer not to follow the above procedure, the conferring of the degree will be postponed until they are eligible for the degree of Doctor of Dental Surgery from the College of Dentistry at The Ohio State University.

General regulations governing all combination curricula are to be found on page 35.

Degrees. When the candidate has completed the 190 credit hours as described above, he will be recommended for the degree of Bachelor of Arts; and upon fulfilling all the requirements of the curriculum of the College of Dentistry he will be recommended for the degree of Doctor of Dental Surgery.

ARTS-EDUCATION

A candidate who has received credit for 220 Quarter-hours (including military science, physical education, and hygiene), and who has met all of the requirements of the College of Arts and Sciences for the degree of Bachelor of Arts, as well as all of the requirements of the College of Education for the degree of Bachelor of Science in Education or such other degrees as are offered by the College of Education, will be recommended for both degrees. It is possible to meet these double requirements within a period of four and one-quarter years, or thirteen Quarters.

Residence in the Colleges. The student should register in both the College of Arts and Sciences and the College of Education as soon as he decides to become a candidate for both degrees, and in any case not later than the beginning of his third year. A later decision may occasion loss of time. It is possible to apply (to the University Examiner) for double registration as late as the beginning of the last year in residence. The candidate must comply with the requirements of both Colleges and have his course of study approved by the Secretaries of both of these Colleges.

A student entering with advanced credit from other colleges must be in residence in the College of Arts and Sciences and in the College of Education for at least one year. To be eligible for the degree Bachelor of Arts, he must obtain credit, during the time registered in the College of Arts and Sciences for at least 45 hours and 90 points in courses listed in this *Bulletin;* and to be eligible for the degree of Bachelor of Science in Education, he must obtain credit for 45 hours and 90 points in professional courses listed in the Bulletin of the College of Education.

Requirements in Points and Hours. To be eligible for both degrees, Bachelor of Arts and the degrees within the College of Education, the candidate must have secured credit for 220 hours (including the requirements in military science, physical education, and hygiene) at the rate of not less than 1.8 points per credit hour undertaken. Of these, 160 hours must be gained by taking courses listed in the Bulletin of the College of Arts and Sciences. Within the remaining 60 hours the student shall complete the professional and other requirements of the College of Education curricula, and credit points secured for work in these courses must equal not less than 1.8 points per hour. Any deficiency in points on these courses must be made up by electing additional work designated by the College of Education.

General regulations governing all combination curricula are to be found on page 35.

Degrees. In general the candidate will find it necessary to carry on courses in both Colleges throughout the last three years of the combination curriculum, completing the work of both Colleges simultaneously. The two degrees will therefore be conferred at the same time. There is no objection, however, to conferring the degrees at different times, if the candidate should order his work in such a way as to make this desirable.

A student who has completed the course in supervised teaching will not be recommended for the degree of Bachelor of Arts until he has met all the requirements for the degree of Bachelor of Science in Education.

ARTS-ENGINEERING

By complying with the regulations described below it is possible for a candidate to secure the degree of Bachelor of Arts in the College of Arts and Sciences and the appropriate bachelor degree in Engineering within a period of five or six years, depending on the line of engineering chosen.

Admission to the College of Arts and Sciences. The candidate must present to the Entrance Board a certificate of graduation from a first grade high school, or from a preparatory school of approved standing, or pass examinations upon fifteen units of college entrance subjects. He should have credit for the following: English three units, mathematics three units, foreign language four units, physics one unit. If any of these are lacking they must be made up by college work in excess of that described below.

Residence in the College of Arts and Sciences. During the first three years the candidate must be registered in the College of Arts and Sciences and must secure 145 Quarter-hours of credit, including the requirements in military science, physical education, and hygiene. Within these 145 hours must be included the group requirements of the College of Arts and Sciences (pages 26-34).

Students entering with advanced credit from other colleges must be in residence in the College of Arts and Sciences of The Ohio State University for at least the last year (45 credit hours and 90 points) of the three years mentioned above.

Residence in the College of Engineering. Upon completion of the work just described the candidate must register in the College of Engineering, at the same time retaining his registration in the College of Arts and Sciences. Application for this double registration should be made to the University Examiner. When he has obtained 190 credit hours in the two colleges, including the requirements in military science, physical education, and hygiene, 160 hours of which are in courses described in this *Bulletin*, the candidate will be eligible for the degree of Bachelor of Arts. To meet these requirements at the end of one year of residence in the College of Engineering, the candidate will in general find it necessary to carry a considerable amount of Arts College work during the fourth year.

Requirements in Points and Hours. To be eligible for the degree of Bachelor of Arts, the candidate must have 160 credit hours in courses in the College of Arts and Sciences at the rate of not less than 1.8 points per credit hour undertaken. This includes the requirements in military science, physical education, and hygiene. He should also secure at least 30 hours in courses (at the 1.8 points per hour ratio) in the College of Engineering, making a total of 190 hours.

General regulations governing all combination curricula are to be found on page 35.

Degrees. Upon fulfilling the requirements as described the candidate will be recommended for the degree of Bachelor of Arts (in the minimum time of four years), and upon fulfilling the requirements of his Engineering course he will be recommended for the appropriate degree in Engineering.

ARTS-GRADUATE

Students in the College of Arts and Sciences who have completed all junior division requirements and 145 Quarter hours of work with a point ratio of not less than 3.5 may apply for admission to the Combination Arts and Sciences-Graduate Course. The general provisions for this course are as follows:

1. The general supervision of this course shall be vested in a joint committee appointed by the Dean of the Graduate School for the Graduate Council and by the Dean of the College of Arts and Sciences for the Committee on Honors.

2. Admission to the combination course shall be by action of this joint committee and may be made conditional upon the passing of a comprehensive examination.

3. The combination course shall consist of four Quarters of full-time work, the larger proportion of which shall be graduate in character. This work shall be conducted in the case of each student under the direction of two advisers appointed by the joint committee, one representing the College of Arts and Sciences, the other representing the Graduate School.

4. A student admitted to the combination course shall be merely registered for such combination course. There shall be no registration for particular courses, no report to the Registrar of grades in particular courses, or of credits earned in particular courses. Such student, however, may be permitted to attend courses for which he is qualified and to participate in all their activities upon presentation to the instructor concerned of a written request from his advisers.

5. All proficiency requirements for the Master's degrees, including the writing of a thesis, must be satisfied. A reading knowledge of one modern foreign language, preferably French or German, is required. This knowledge will be tested by an examination given by the language department concerned.

6. Upon the completion of the combination course, the student shall be given a comprehensive examination, both written and oral. Inasmuch as the work of the student must be judged largely by the examination, it will be more thorough and extensive than the usual examinations given for the Master's degree. The examination in each individual case shall be conducted by a committee consisting of the two advisers appointed by the joint committee, together with such other members of the teaching staff as the joint committee may select.

7. If the student meets all these requirements satisfactorily, the joint committee will recommend him to the Graduate Council and to the Executive Committee of the College of Arts and Sciences for both the Bachelor's and Master's degrees at the same time.

8. A student failing to pass the comprehensive examination, or whose thesis is not satisfactory, or who has not satisfactorily met any other prescribed requirement, may be recommended by the joint committee to the Faculty of the College of Arts and Sciences for the B.A. degree. The joint committee may in such cases also recommend to the Graduate Council the acceptance of a particular amount of graduate credit toward the completion of the requirements for the Master's degree in regular course.

9. A student in the combination course whose work is found by his advisers to be unsatisfactory may at any time during or at the conclusion of the course, be transferred by the action of the joint committee to the regular course in the College of Arts and Sciences, with so much credit as is deemed equitable.

10. A student in the combination course who, at the end of three Quarters, is unable for any good and sufficient reason to continue through the fourth Quarter, may by the action of the joint committee be given a comprehensive examination on the fields which he has covered, and if such examination is satisfactory, be recommended by the joint committee to the Faculty of the College of Arts and Sciences for the B.A. degree; but in such cases no graduate credit shall be recorded toward the M.A. degree.

ARTS-LAW

This course includes the first three years of the curriculum of the College of Arts and Sciences and the three-year curriculum of the College of Law.

Residence in the College of Arts and Sciences. In arranging his course the candidate must meet all the requirements of the curriculum of the College of

Arts and Sciences as described on pages 26-34 of this *Bulletin,* except as modified by the following statement:

A total of 145 credit hours is required, including the requirements in military science, physical education, and hygiene. The 145 credit hours must include the Junior Division requirements of the College of Arts and Sciences and 45 academic credit hours obtained while enrolled in the Senior Division of the college. Of these 45 hours, at least 25 must be in courses numbered "500" or "600" and at least 25 hours must be in the field of the social sciences, such work in social science to be considered as a major. The major must be declared during the third Quarter of the sophomore year. A point average of 2.25 must be maintained in the courses comprising the major. Only courses described in this *Bulletin* may be counted towards a degree, but advanced courses in Military Science and Tactics will not be so counted. (See page 34.)

Students entering with advanced credit from other colleges must be in residence in the College of Arts and Sciences of the Ohio State University for at least the last year (45 credit hours and 90 points) of the three years mentioned above.

Admission to the College of Law. Upon completion of the requirements of the three years' work in the College of Arts and Sciences the candidate registers in the College of Law, at the same time retaining his registration in the College of Arts and Sciences. To secure this double registration application should be made to the University Examiner.

Requirements in Hours and Points. To be eligible for the degree of Bachelor of Arts the candidate must have acquired 145 credit hours in courses in the College of Arts and Sciences, at the rate of not less than 1.8 points per credit hour undertaken. This includes the requirements in military science, physical education, and hygiene. He must also have secured not less than 45 credit hours (at the 1.8 points per credit hour ratio) in the first year of the course of the College of Law, making a total of 190 credit hours.

Students may not present in excess of ten hours of "K" credit after the completion of the first two years of Arts work; and if such credit to the amount of ten hours is presented it must be on the records at least two Quarters prior to the completion of the requirements for the professional degree.

Students in good standing who, however, have failed to make the required point ratio on the work of the first year in the College of Law, may make up their deficiency in points by carrying additional courses in the College of Arts and Sciences in order to become eligible for the Bachelor of Arts degree. If they prefer not to follow the above procedure, the conferring of the degree will be postponed until they are eligible for the degree of Bachelor of Laws from the College of Law at The Ohio State University.

General regulations governing all combination curricula are to be found on page 35.

Degrees. Upon completing the requirements described above the candidate will be recommended for the degree of Bachelor of Arts; and upon completion of the requirements of the curriculum of the College of Law he will be recommended for the degree of Bachelor of Laws.

ARTS-MEDICINE

This course includes the first three years of the curriculum of the College of Arts and Sciences and the four-year curriculum of the College of Medicine. By fulfilling the following conditions the degree of Bachelor of Arts and the degree of Doctor of Medicine may be obtained in seven years.

Residence in the College of Arts and Sciences. During the three years of residence in the College of Arts and Sciences the candidate must meet the following requirements:

(1) He must secure credit for a total of 145 Quarter-credit hours, including the requirements in military science, physical education, and hygiene.

(2) No part of the curriculum in Medicine (or equivalent courses) may be counted as a part of these 145 hours.

(3) These 145 hours must include the group requirements of the College of Arts and Sciences (pages 26-34) and the requirements for admission to the College of Medicine. (See curriculum outlined on page 44.)

(4) Students entering with advanced credit from other colleges must be in residence in the College of Arts and Sciences of The Ohio State University for at least the last year (45 credit hours and 90 points) of the three years mentioned above.

Residence in the College of Medicine. If the candidate is admitted to the College of Medicine upon completion of the requirements enumerated in the preceding paragraph, he must retain at the same time his registration in the College of Arts and Sciences.

Requirements in Points and Hours. To be eligible for the degree of Bachelor of Arts the candidate must have secured 145 credit hours in courses in the College of Arts and Sciences at the rate of not less than 1.8 points per credit hour undertaken. This includes the requirements in military science, physical education, and hygiene. He must also secure at least 45 credit hours (at the 1.8 points per credit hour ratio) in the first year of the course in Medicine, making a total of 190 hours.

Students may not present in excess of ten hours of "K" credit after the completion of the first two years of Arts work; and if such credit to the amount of ten hours is presented it must be on the records at least two Quarters prior to the completion of the requirements for the professional degree.

Students in good standing who, however, have failed to make the required point ratio on the work of the first year in the College of Medicine, may make up their deficiency in points by carrying additional courses in the College of Arts and Sciences in order to become eligible for the Bachelor of Arts degree. If they prefer not to follow the above procedure, the conferring of the degree will be postponed until they are eligible for the degree of Doctor of Medicine from the College of Medicine at The Ohio State University.

General regulations governing all combination curricula are to be found on page 35.

The curriculum which meets the requirements of the College of Arts and Sciences for the combination curriculum, Arts-Medicine, is to be found on page 44, under the heading "Course Preliminary to Admission to the College of Medicine."

Degrees. Upon completing the requirements as described above, the candidate will be recommended for the degree of Bachelor of Arts; and upon fulfilling all the requirements of the curriculum of the College of Medicine he will be recommended for the degree of Doctor of Medicine.

COURSES PRELIMINARY TO PROFESSIONAL CURRICULA

Some of the professional colleges of the University have requirements for admission that include the completion of a definite number of college courses of study, and in some instances the exact character of these courses is specified. The elastic arrangement of the curriculum of the College of Arts and Sciences makes it possible for the student to meet these requirements and at the same time conform to the requirements of the College of Arts and Sciences. The Colleges of Dentistry, Law, and Medicine admit students to their freshman classes only at the beginning of the Autumn Quarter.

Admission to the College of Arts and Sciences. The candidate must present to the Entrance Board a certificate of graduation from a high school of the first grade, or from a preparatory school of recognized standing; or he must pass examinations upon fifteen units of college entrance subjects. It is urged that the high school course include the following: English three units, mathematics two units, foreign language four units, physics one unit.

Residence in the College of Arts and Sciences. While registered in the College of Arts and Sciences, the candidate is expected to conform to the curriculum requirements of this College as described on pages 26-34. Only such deviations from this curriculum can be allowed as are rendered necessary by the prerequisites of the professional college, or in unusual cases, where convincing reasons can be presented by petition to the Executive Committee of the College of Arts and Sciences.

COURSE PRELIMINARY TO ADMISSION TO THE COLLEGE OF DENTISTRY

Under the statutes of Ohio, an applicant for admission to any dental college of the State must have credit for at least two years in a college of Arts (90 Quarter-credit hours, exclusive of military science, physical education, and hygiene). The applicant's point standing must be not less than a minimum of 2 points per credit hour on all work undertaken at The Ohio State University. The first year of college pre-dental work must include credit for the following courses:

General Zoology	(401)	5 hours
Anatomy	(407)	5 hours
Chemistry	(401-402-403) or (411-412-413)	15 hours
English	(401) and (430)	10 hours

The work of the second year must include the following courses:

Chemistry	(451-452)	10 hours
Physics	(411-412) or (411-413)	10 hours
Social Science Sequence		15 hours

For the selection of the remaining fifteen hours the candidate must conform as closely as possible to the requirements of the curriculum of the College of Arts and Sciences with the exception that foreign language is not required of predental students unless they expect to be candidates for a Bachelor of Arts degree under the Arts-Dentistry combination curriculum (page 37). The following subjects are recommended as suitable electives: fine arts, foreign language, history, mathematics, economics, political science, philosophy, physiology, psychology, and sociology.

The following two-year program is suggested to meet the requirements outlined above. Although Zoology 402 is not required, the election of this course is strongly recommended. Students should carefully review their algebra preparatory to the required sophomore work in physics. English 430 may be deferred until the sophomore year if the student wishes to complete a two-Quarter sequence during the Winter and Spring Quarters of the freshman year, such as History 401-402 or Mathematics 421-422.

PREDENTAL COURSE

FIRST YEAR

Autumn Quarter			Winter Quarter			Spring Quarter		
Chemistry	(401 or 411)	5	Chemistry	(402 or 412)	5	Chemistry	(403 or 413)	5
Zoology	(401)	5	Zoology	(402)	5	Anatomy	(407)	5
English	(401)	5	English	(430)	5	Elective		5

SECOND YEAR

Chemistry	(451)	5	Chemistry	(452)	5	Social Science Sequence		5
Physics	(411)	5	Physics	(412)	5	Elective		10
Social Science Sequence		5	Social Science Sequence		5			

COURSE PRELIMINARY TO ADMISSION TO THE COLLEGE OF LAW

The minimum admission requirement for the College of Law (which admits new students in the Autumn Quarter only) is 90 Quarter-hours of academic work, exclusive of military science, physical education, and hygiene, with an average of 2 points per credit hour on all work undertaken.

Students who plan to secure admission to the College of Law on this minimum basis, or who are doing more than this amount but are not candidates for the degree in Arts, are designated as "pre-law" students, to distinguish them from candidates preparing for the Law College with a B.A. degree either under the Arts-Law curriculum (three years in Arts) or the regular Arts curriculum (four years in Arts).

"Pre-law" students must conform to the regular Junior Division requirements of the College of Arts and Sciences, as indicated on pages 26-31, except where the record in the college office shows that specific permission to deviate from them has been granted. A "pre-law" student may, however, entirely omit the foreign language requirement (page 27), or he may reduce the natural science requirement (page 28) by one Quarter (completing only the first two Quarters of a sequence) in case he has or acquires a "working knowledge" (page 27) of one foreign language.

In view of the exacting demands of the legal profession and the highly competitive conditions which prevail in it, the adequacy of the minimum two-year preparation for admission to law school is open to serious question and students are strongly urged to give more time to their pre-professional course, whether or not they become candidates for a degree in Arts. If there is any probability of such candidacy, students should comply fully with the Junior Division requirements.

COURSE PRELIMINARY TO ADMISSION TO THE COLLEGE OF MEDICINE

For admission, the College of Medicine ordinarily requires 145 Quarter-credit hours (inclusive of the requirements in military science, physical education, and hygiene). The point standing of an applicant must be not less than a ratio of 2 points per credit hour on all work undertaken here or on courses of similar quality from another college or university. Usually a ratio of not less than 2.5 is required. Students preparing to meet these requirements in the College of Arts and Sciences of the Ohio State University must conform to the course outlined below if they have started the pre-medical course in the Autumn Quarter of 1933 or thereafter. The course of studies meets all requirements for the Arts-Medicine combination curriculum, provided the student brings adequate credit in foreign language from high school. Unless a student maintains a point ratio of 2.5 on the work of the first year he will not be permitted to undertake the complete course as suggested for the second year. Students who fail to qualify for the full sophomore program should consult with the Student Counselor early in their sophomore year.

ARTS-MEDICINE CURRICULUM ON THE THREE-YEAR PLAN

FIRST YEAR

Autumn Quarter			Winter Quarter			Spring Quarter		
*Foreign Language		5	Foreign Language		5	Foreign Language		5
Chemistry	(401 or 411)	5	Chemistry	(402 or 412)	5	Chemistry	(403 or 413)	5
English	(401)	5	Mathematics	(421)	5	Mathematics	(422)	5

SECOND YEAR

Physics	(411)	5	Physics	(412)	5	Physics	(413)	5
Social Science Sequence		5	Social Science Sequence		5	Social Science Sequence		5
Foreign Language		5	Zoology	(401)	5	Zoology	(402)	5
Chemistry	(421)	3	Chemistry	(422)	3	Chemistry	(423)	3

THIRD YEAR

Anatomy	(613) 5	Anatomy	(611, 612, 614, or 616) 5	Anatomy	(615 or 619) 5
Chemistry	(645) 3			Elective (Social Science)	5
Chemistry	(649) 3	Chemistry	(646) 3	Elective	5
English	(430) 5	Chemistry	(650) 3		
		Elective	5		

* This plan will fulfill the language requirements only if the student has had four years in one language in high school. If credits are otherwise presented, see page 27 of the Bulletin of the College of Arts and Sciences for completion of the language requirement.

Students with excellent records at the end of their freshman year may consult with the Arts College officers and the University Examiner to determine the possibility of completing the entrance requirement for Medicine in less than three years. This necessitates giving up the Bachelor of Arts degree.

Students who have maintained a point ratio of 2.5 during their freshman year may elect the second year of this curriculum which carries a load of 18 academic hours each Quarter. Failure to maintain a point standing in the freshman year of the above quality will lengthen the time necessary to complete the pre-medical course.

A scholastic aptitude test, prepared by the American Medical Association, is given during the last year of the student's pre-medical training to all candidates for admission to medical college. This test should be taken by all students who plan to enter either The Ohio State University Medical School or a similar institution the following fall. Information as to the place and date for the examination may be secured from the College Office or the office of the University Examiner early in the Autumn Quarter of each year. The examination is not one for which specific preparation can be made; the purpose is to test the student's native ability and general aptitude for medical training. The fee for the examination is one dollar.

In view of the large number of candidates for admission to medical schools throughout the country, it should be borne in mind that only those students whose pre-medical work in college is of superior quality can expect to secure admission to any first-class medical college.

Students preparing elsewhere for admission to the College of Medicine should consult the Medical Bulletin for a statement of the requirements for admission.

SUGGESTED CURRICULUM IN CHEMISTRY

The following curriculum is primarily intended for those students who enter the University with the intention of majoring in Chemistry. The various courses in Chemistry and their prerequisites are arranged in such a manner that it will be possible for the student to take the four fundamental years work in this science at the same time that he is fulfilling the requirements of the College for the degree, Bachelor of Arts. The following points are to be noted:

(a) A point-hour ratio of 3 or better must be attained at the end of the Freshman year in order to carry the program of the Sophomore year.

(b) In order to fulfill the modern language requirement, the student must make either a grade of "B" or better in the fourth course or he must pass a proficiency test which is equivalent thereto. The German language is preferred.

(c) All students who have had one year of biology in high school must substitute a non-chemical elective for this requirement. It is preferred that the social science sequence of the Junior year be the subject elected in place of biology, and that its place in the Junior year be given to Economics scheduled for the Senior year.

(d) All elective hours which may be available in the Senior year must be chosen from fields other than chemistry.

(e) Students who are unable to continue in this curriculum at the beginning of the Sophomore year because of failure to maintain the required point standing, or those whose programs are different by reason of transferred

credits from other institutions, may major in the Department of Chemistry under the usual provisions of the curriculum of this College.

FIRST YEAR

Autumn Quarter			Winter Quarter			Spring Quarter		
Chemistry	(401 or 411)	5	Chemistry	(402 or 412)	5	Chemistry	(403 or 413)	5
Mathematics	(421)	5	Mathematics	(422)	5	Mathematics	(423)	5
English	(401)	5	English	(430)	5	Modern Language		5
Physical Education	(401)	1	Physical Education	(402)	1	Physical Education	(403)	1
Physical Education	(400)	1	Military Science		1	Military Science		1
Military Science		1						

SECOND YEAR

Chemistry	(421)	4	Chemistry	(422)	4	Chemistry	(423)	4
Mathematics	(441)	5	Mathematics	(442)	5	Chemistry	(424)	1
Modern Language		5	Modern Language		5	Mathematics	(443)	5
Biological Science		5	Biological Science		5	Modern Language		5
Physical Edu. (Women)		1	Physical Edu. (Women)		1	Biological Science		5
Military Science		1	Military Science		1	Physical Edu. (Women)		1
						Military Science		1

THIRD YEAR

Chemistry	(647)	3	Chemistry	(648)	3	Chemistry	(641)	3
Chemistry	(649)	3	Chemistry	(650)	3	Chemistry	(783)	1
Physics	(431)	5	Chemistry	(782)	1	Physics	(433)	5
Social Science		5	Physics	(432)	5	Social Science		5
			Social Science		5	Elective		3

FOURTH YEAR

Chemistry	(681)	3	Chemistry	(682)	3	Chemistry	(683)	3
Chemistry	(691)	2	Chemistry	(692)	2	Chemistry	(693)	2
Chemistry (661) or Chemistry (695)		3	Chemistry (662) or Chemistry (696)		3	Chemistry Elective		3
Chemistry	(701)	2	Chemistry	(701)	2	Chemistry	(701)	2
Economics		5	Economics		5	Economics		5
Elective (Non-chemical)		3	Elective (Non-chemical)		3	Elective (Non-chemical)		3

DEPARTMENTS OF INSTRUCTION

SURVEY COURSES

PROFESSORS HENDERSON, LEIGHTON, ODEGARD, AND SPIEKER, ASSOCIATE PROFESSORS McDONALD AND SNOW, ASSISTANT PROFESSOR DUPRE, AND ASSISTANTS

FOR ADVANCED UNDERGRADUATES AND GRADUATES

According to the University regulations, courses in this group are not open to Freshmen or Sophomores.

603. Survey of Greek Civilization. Fifteen credit hours. Winter Quarter. Lectures, readings, conferences, and reports. Elective. Prerequisite, junior or senior standing with a point ratio of 3 or better. A knowledge of Greek is not necessary. Class is limited to twenty-five students and application must be made through the Dean's office. Mr. Dupre, Mr. McDonald, Mr. Snow, and others.

The lectures will be supplementary to extensive reading designed to give an understanding of Greek civilization in its various phases—the political relationships of the Greek peoples, their philosophy, social structure, art, and literature. A comprehensive examination will conclude the course.

***604. Survey of the Romantic Movement.** Fifteen credit hours. Winter Quarter. Lectures, readings, conferences, and reports. Elective. Prerequisite, junior or senior standing with a point hour ratio of 3 or better. Class is limited to twenty-five students and application must be made through the Dean's office. Lectures will be given by members of the departments concerned.

As in Survey 603, the lectures will be supplementary to extensive reading designed to give an understanding of this period of history in its various phases. A comprehensive examination will conclude the course.

605. Foundations of Contemporary Civilization. Five credit hours. One Quarter. Autumn and Winter. Five meetings each week. Mr. Leighton, Mr. Odegard.

This course is required of all students majoring in subjects falling within the fields of biological and inorganic sciences, mathematics, and psychology. It is designed to afford the mature student some insight into the progress of thought in a great province of life to which he has given relatively little attention during his course. The course deals with the changes of thought in religion, ethics, social and political philosophy in relation to the general intellectual and social changes of modern civilization. It concludes with a brief discussion of the chief problems of our present civilization.

608. Development of Modern Science. Five credit hours. One Quarter. Autumn and Winter. Five meetings each week. Mr. Henderson, Mr. Spieker.

This course is designed especially for students who have not majored in science. Its purpose is to give the non-science student a general view of the historical development of scientific ideas, and to dwell upon the nature and validity of scientific hypotheses and theories from a scientific point of view.

* Not given in 1935-1936.

ACCOUNTING
Office, 309 Commerce Building

PROFESSORS TAYLOR AND MILLER, ASSOCIATE PROFESSOR HECKERT, ASSISTANT PROFESSORS WILLCOX AND SHONTING, AND INSTRUCTORS

Students who wish to carry additional courses in this Department are reminded that the College of Arts and Sciences permits thirty hours of work to be carried in courses offered in the Bulletins of other Colleges. See Bulletin of the College of Commerce and Administration for further courses in this Department.

401-402. Elements of Accounting. Five credit hours. Two Quarters. Both 401 and 402 are given Autumn, Winter, Spring. Three class meetings and two two-hour laboratory periods each week. Prerequisite or concurrent, Economics 401-402 or 403-404. All instructors.

The work of the first Quarter consists of the theory of account construction together with the development of books of original entry.

The second Quarter is devoted to the application of accounting principles to the different forms of business organization and the preparation and interpretation of financial statements.

405. Outline of Accounting. Five credit hours. One Quarter. Autumn and Winter. Five class meetings each week. Mr. Willcox, Mr. Shonting.

A general survey of the principles of accounting and their application in modern business. Points emphasized are: use of accounting for information and control; the double-entry theory and the mechanics of bookkeeping; account classification; determination of profits; problems of valuation; presentation and analysis of financial and operating statements. The course is intended for students whose major interest is in fields other than accounting; it will serve, however, as preparation for a limited amount of specialized study in the problems of mercantile, manufacturing, and institutional accounting.

AGRICULTURAL CHEMISTRY
Office, 211 Townshend Hall

PROFESSOR LYMAN, ASSOCIATE PROFESSOR BURRELL

Students who wish to carry additional courses in this Department are reminded that the College of Arts and Sciences permits thirty hours of work to be carried in courses offered in the Bulletins of other Colleges. See Bulletin of the College of Agriculture for further courses in this Department.

FOR ADVANCED UNDERGRADUATES AND GRADUATES

According to the University regulations, courses in this group are not open to Freshmen or Sophomores.

601. General Biological Chemistry. Five credit hours. One Quarter. Autumn and Winter. Three lectures and two three-hour laboratory periods each week. Prerequisite, acceptable courses in quantitative analysis and organic chemistry. Mr. Burrell.

A study of the chemistry of the fats, carbohydrates, proteins and other compounds of biological importance, and the general chemistry of the metabolism of plants and animals. This course is intended for students majoring in biological subjects, and as a prerequisite to certain advanced courses in this department.

AMERICAN HISTORY

(See History)

ANATOMY

Office, 410 Hamilton Hall

PROFESSORS BAKER AND KNOUFF, ASSOCIATE PROFESSOR EDWARDS, ASSISTANT PROFESSORS SETTERFIELD AND PALMER, MR. YATES, MR. AMSTUTZ, AND ASSISTANTS

FOR ADVANCED UNDERGRADUATES AND GRADUATES

Students desiring to major in anatomy should follow the three-year curriculum designed for pre-medical students on page 44.

Anatomy majors may include ten hours of zoology and ten hours of physiology in the minimum of forty hours required for a major selected from the allied departments listed as senior electives below.

Senior students majoring in anatomy may take any of the junior optional courses in anatomy not already completed and in addition Anatomy 617-618.

Elective courses in allied departments recommended for the senior year:

Zoology 504, 509, 601, 605, 620
Physiology 621, 622
Psychology 601, 602, 603

407. Comparative Anatomy. Five credit hours. Spring Quarter. Two lectures and two three-hour laboratory periods each week. Predental course, first year. Prerequisite, Zoology 401 or an equivalent. Mr. Edwards.

The anatomy of the shark, the frog, and the osteology of the skull of the dog.

FOR ADVANCED UNDERGRADUATES AND GRADUATES

According to the University regulations, courses in this group are not open to Freshmen or Sophomores.

601-602-603. Seminary. One credit hour. Autumn, Winter, and Spring Quarters. One conference each week. Prerequisite, two Quarters of anatomy. Open to students majoring in anatomy. The staff.

Lectures by members of the staff, conferences on investigations being carried on in the department, and reports on recent investigations in anatomy. Subjects for extended study will be changed from Quarter to Quarter.

611. Comparative Histology. Five credit hours. Winter Quarter. Two lecture and six laboratory hours each week. Prerequisite, three Quarters of biological science, including Anatomy 613 or an equivalent. Mr. Knouff, Mr. Setterfield.

An introductory course in cytology.

612. Cytology. Five credit hours. Winter Quarter. Two lecture and six laboratory hours each week. Prerequisite, three Quarters of biological science, which must include Anatomy 613 or an equivalent, with consent of instructor. Class limited to ten students. Mr. Knouff.

A study of special cell types with special emphasis on the cytoplasmic differentiations of the cell.

613. Comparative Anatomy of the Vertebrates. Five credit hours. One Quarter. Autumn and Winter. Two lectures or recitations and two three-hour laboratory periods each week. Prerequisite, Zoology 401-402. Zoology 509 is recommended. Mr. Setterfield.

The comparative anatomy of the Elasmobranchs and Amphibians as illustrated by the shark, frog, and mud-puppy.

Not open to students who have credit for Anatomy 401 or 406.

614. Comparative Anatomy of the Vertebrates: Minor Problems. Five credit hours. Winter Quarter. Two lectures or recitations and two three-hour laboratory periods each week. Prerequisite, Anatomy 613 or equivalent. Mr. Setterfield.

The comparative anatomy of the reptiles and birds as illustrated by the turtle, alligator, snake, and pigeon.

615. Comparative Vertebrate Embryology. Five credit hours. Spring Quarter. Two lectures or recitations and two three-hour laboratory periods each week. Prerequisite, Zoology 401-402 and Anatomy 613 or equivalent, with consent of instructor. One additional Quarter of Anatomy recommended, preferably Anatomy 616. Class limited to ten students. Mr. Knouff and assistant.

An experimental and descriptive course on the development of one of the vertebrates.

616. Comparative Vertebrate Embryology. Five credit hours. Winter Quarter. Two lectures or recitations and three two-hour laboratory periods each week. Prerequisite, Anatomy 613. Mr. Yates and assistant.

The development of the chick with especial emphasis on the formation of foetal membranes and on the development of the organs.

617. Elementary Neurology. Five credit hours. Autumn Quarter. Two lectures and six laboratory hours each week. Prerequisite, Anatomy 613 and 619. Mr. Setterfield.

The comparative morphology of the nervous system of vertebrates.

Not open to students who have credit for Anatomy 408.

618. Elementary Neurology. Five credit hours. Winter Quarter. Two lectures and six laboratory hours each week. Prerequisite, Anatomy 617. Mr. Setterfield.

The study of the microscopic structure of the spinal cord and brain of the higher mammals with special reference to reaction systems.

619. Comparative Anatomy of the Vertebrates. Five credit hours. Spring Quarter. Two lectures or recitations and six laboratory hours each week. Prerequisite, Anatomy 613 or equivalent. Anatomy 616 is recommended. Mr. Setterfield.

The anatomy of the mammals with special reference to the cat.

701. Minor Problems in Anatomy. Three to five credit hours. Autumn, Winter, and Spring Quarters. Prerequisite for all courses except Neurology, three Quarters of Anatomy; for Neurology, Anatomy 617-618. The staff.

FOR GRADUATES

An undergraduate student shall not be permitted to take any course in the "800" group except by permission of the Graduate Council.

For description of graduate courses in this department see the Bulletin of the Graduate School.

ART

(See Fine Arts)

ASTRONOMY

(See Physics and Astronomy)

BACTERIOLOGY

Office, 210 Pharmacy and Bacteriology Building

PROFESSORS MORREY AND STARIN, ASSOCIATE PROFESSOR WINTER, ASSISTANT PROFESSOR SPEER, MR. DEEM, MR. WEISER, AND ASSISTANTS

These courses in bacteriology are open to advanced undergraduate and graduate students only. Not open to premedical students unless they are in their senior year. Prerequisite, one year of chemistry and two Quarters of a biological science.

Students majoring in bacteriology are strongly advised to begin the subject in the Summer Quarter following the sophomore year. Practically a year's work in bacteriology may be gained by so doing. Such students should also take at least two Quarters of quantitative chemistry in their second year and are advised to take one Quarter of college algebra.

509. General Micro-Biology. Five credit hours. One Quarter. Autumn, Winter, Spring. Three one-hour recitations and two two-hour laboratory periods each week. Prerequisite, ten hours of chemistry and ten hours of botany or zoology. Mr. Winter.

An introductory course in micro-biology. It deals with the physiology, nutrition, and control of bacteria, their relation to health, sanitation, to the diseases of plants and animals, with applications to special fields.

This course is neither introductory to nor a substitute for any other course in bacteriology. Students planning to take more bacteriology must take Bacteriology 607.

FOR ADVANCED UNDERGRADUATES AND GRADUATES

According to the University regulations, courses in this group are not open to Freshmen or Sophomores.

607. General Bacteriology. Five credit hours. One Quarter. Autumn, Winter, Spring. Two class periods and three three-hour laboratory periods each week. Mr. Morrey, Mr. Winter, Mr. Weiser, and assistants.

This course is a prerequisite to all elective courses in the department and is designed to prepare for special work. The lectures consider the botanical relationships of bacteria, their morphology, classification, effect of physical and chemical environment, action on food material, etc. The laboratory work includes preparation of the ordinary culture media and making of cultures on these media, staining methods, and some typical biochemical actions.

Not open for graduate credit to students majoring in bacteriology.

608. Pathogenic Bacteria. Three credit hours. Winter Quarter. Three class periods each week. Prerequisite, Bacteriology 607. Mr. Morrey.

A study of the more important bacteria producing disease in man; ways of transmission and methods of protection against infectious diseases; sanitation and the theories of immunity.

609. Pathogenic Bacteria. Three credit hours. Winter Quarter. Three three-hour laboratory periods each week. Prerequisite, Bacteriology 607. Mr. Winter and assistant.

Laboratory work on the more important bacteria producing disease in man, including cultural and staining properties, methods of diagnosis, animal inoculation.

614. Water Examination, Sewage Disposal, Water Filtration. Three credit hours. Winter Quarter. Three class periods each week. Prerequisite, Bacteriology 607. Mr. Morrey.

A study of the organisms concerned in these processes. The modern water filtration and sewage disposal plants of the city of Columbus afford most excellent opportunities for practical demonstration and also for study of special problems.

***616. Bacteriological Chemistry.** Three credit hours. Spring Quarter. Three class periods each week. Prerequisite, Bacteriology 607. Mr. Morrey.

Enzymes and the theory of their action. Technical uses of bacteria and fungi in the fermentation and allied industries.

617. Immunity and Serum Therapy. Three credit hours. One Quarter. Autumn and Spring. Three class periods each week. Prerequisite, Bacteriology 607, 608, and 609, or equivalents. Mr. Starin, Mr. Speer.

A discussion of the general principles of immunity, including toxins and anti-toxins, bactericidal substances, agglutinins, precipitins, opsonins, etc.

* Not given in 1935-1936.

618. Immunity and Serum Therapy. Three credit hours. One Quarter. Autumn and Spring. Three three-hour laboratory periods each week. Prerequisite, Bacteriology 607, 608, and 609, or equivalents. Mr. Starin, Mr. Speer, and assistant.

Laboratory work in the preparation of toxins, antitoxins, antibacterial substances, bacterial vaccines, and in the serological methods of diagnosis.

***619. Pathogenic Protozoa.** Three credit hours. Spring Quarter. Three class periods each week. Prerequisite, Bacteriology 607, 608, and 609, or equivalents. Mr. Starin.

The various protozoal diseases are considered, with special attention to trypanosomiases, piroplasmoses, and spirochaetoses.

625-626. Special Technique in Pathogenic Bacteriology. Five credit hours. Autumn and Winter Quarters. Conferences, library, and laboratory work. Prerequisite, Bacteriology 607, 608, 609, or equivalents. Mr. Starin and assistant.

A course in technique in which the student is thoroughly trained in working with such material and methods as are encountered in board of health and hospital laboratories.

627. Special Problems in Pathogenic Bacteriology. Five credit hours. Spring Quarter. Conferences, library, and laboratory work. Prerequisite, Bacteriology 607, 608, and 609, or equivalents. Mr. Speer, Mr. Weiser.

701. Minor Investigations. Three or five credit hours each Quarter. Autumn, Winter, Spring. A student may enter at the beginning of any Quarter. Prerequisite, Bacteriology 607, 608, 609 and either 617, 618 or 625-626, or equivalents. Department staff.

These courses are designed for such students as have completed the equivalent of two years' work in bacteriology and are still undergraduates. The work will be outlined by the instructor in charge to meet the individual student's needs.

FOR GRADUATES

An undergraduate student shall not be permitted to take any course in the "800" group except by permission of the Graduate Council.

For description of graduate courses in this department see the Bulletin of the Graduate School.

BOTANY

Office, 102 Botany and Zoology Building

PROFESSORS TRANSEAU, SCHAFFNER (RESEARCH), STOVER, SAMPSON, AND TIFFANY, ASSOCIATE PROFESSORS WALLER AND MEYER, ASSISTANT PROFESSOR BLAYDES, MISS LAMPE, MR. CAMP, MISS BROWN, MR. GORDON, MR. HICKS, MR. FREELAND, MR. LIMING, AND ASSISTANTS

Students who desire to carry additional courses in this Department are reminded that the College of Arts and Sciences permits thirty hours of work to be carried in courses offered in the Bulletins of other Colleges. See Bulletin of the College of Agriculture for further courses in this Department.

401. General Botany. Five credit hours. One Quarter. Autumn, Winter, Spring. Five recitation periods each week. Mr. Sampson, Mr. Tiffany, Mr. Waller, Mr. Blaydes, instructors and assistants.

A study of the structure of leaves, stems, and roots; growth and nutritive processes of plants, and the relation of plants to their environments. Demonstrations of plant processes and of the effects of climate and soil on growth and distribution of plants; field trips on classification of trees and observation of plant behavior.

402. General Botany. Five credit hours. One Quarter. Autumn, Winter, Spring. Five recitation periods each week. Prerequisite, Botany 401. Mr. Sampson, Mr. Tiffany, Mr. Waller, Mr. Blaydes, instructors and assistants.

A study of reproduction, variations, heredity, and evolution in plants, followed by a general survey of the natural vegetation of North America; the nutrition and reproduction of bacteria and fungi in relation to decay, nitrate formation, diseases, and sanitation; a survey of the great plant groups, and the classification of some of the common plants of Ohio.

* Not given in 1935-1936.

405. Local Flora. Five credit hours. Spring Quarter. Two lectures and six laboratory hours each week. Given in alternate years. Prerequisite, Botany 401-402. Mr. Tiffany.

The aim of the course is to become familiar with the plants, other than ferns and seed plants, common in Ohio. Laboratory work devoted to identification, by keys and manuals, of common forms of algae, fungi, liverworts, and mosses. Lectures on methods of collection and preservation, chief characteristics, and economic importance of the group. Several Saturday field trips.

Not open to students who have credit for Botany 455.

406. Local Flora. Five credit hours. Spring Quarter. Two lectures and six hours laboratory and field work each week. Prerequisite, Botany 401-402. Mr. Blaydes, Mr. Hicks, Mr. Gordon.

A laboratory, field, and lecture course devoted to classifying the ferns and seed plants common in Ohio. Field characteristics and identification in the field will be emphasized as well as use of manuals and keys. Several Saturday field trips.

Not open to students who have credit for Botany 456.

419. General Plant Pathology. Five credit hours. One Quarter. Autumn and Spring. Three lectures and two two-hour laboratory periods each week. Prerequisite, Botany 401-402. Mr. Stover.

An introduction to the study of the diseases of cultivated plants. The nature, importance, causes, symptoms, spread, classification, and control of plant diseases; the life history of pathogenic organisms; the course of a plant disease; and the effects of environmental conditions, cultural practices, and the history of the host species upon the occurrence and severity of diseases. A number of representative plant diseases of economic importance are studied in the field and in the laboratory.

***455. Local Flora: Algae, Liverworts, and Mosses.** Three credit hours. Prerequisite, an elementary course in botany.

Laboratory and field work on the collection and classification of the simpler green plants.

Not open to students who have had or contemplate taking Botany 405.

†456. Local Flora: Trees, Shrubs, and Herbs. Three credit hours. Prerequisite, an elementary course in botany.

Laboratory and field work on the classification of the commoner ferns and seed plants.

Not open to students who have had or contemplate taking Botany 406.

FOR ADVANCED UNDERGRADUATES AND GRADUATES

According to the University regulations, courses in this group are not open to Freshmen or Sophomores.

601. Plant Ecology. Five credit hours. Autumn Quarter. Three lectures and one four-hour laboratory period each week. Prerequisite, Botany 401-402 and two Quarters of biological work. Mr. Transeau, Mr. Gordon.

Lectures on the vegetation of the Eastern United States with special reference to the plant associations and formations of Ohio. Field work on the associations of the vicinity of Columbus and their successions. Reading of important literature.

602. Plant Ecology. Five credit hours. Spring Quarter. Three lectures and one four-hour laboratory period each week. Prerequisite, Botany 601. Mr. Transeau, Mr. Gordon.

General principles of ecological plant geography. A discussion of associations and successions of the major divisions of the vegetation of North America. Assigned readings of the more important literature. Several Saturday field trips.

605. Plant Physiology. Five credit hours. One Quarter. Autumn and Winter. Three lectures and two two-hour laboratory periods each week. Prerequisite, Botany 401-402 and two additional Quarters of biology. Mr. Transeau, Mr. Meyer, Mr. Freeland.

The physiology of absorption and movement of water, salts, and gases in plants. The properties of water, solutions, and colloids; permeability, diffusion, absorption, transpiration.

Not open to students who have credit for Botany 415.

* Not given in 1935-1936.

† Not given during the academic year, 1935-1936.

606. Plant Physiology. Five credit hours. One Quarter. Winter and Spring. Three lectures and two two-hour laboratory periods each week. Prerequisite, Botany 605 or 415. Mr. Transeau, Mr. Meyer, Mr. Freeland.

The physiology of nutrition, growth and movement; photosynthesis, other syntheses, enzymes, digestion, translocation, accumulation, assimilation, respiration, fermentation, growth.

Not open to students who have credit for Botany 416.

611. Evolution of Plants. Five credit hours. Spring Quarter. Lectures and assigned readings. Given in alternate years. Prerequisite, Botany 401-402 and two additional Quarters of botany. Mr. Schaffner.

The progress of evolution in the plant kingdom with a general discussion of the problems and factors involved, including both the scientific and philosophical aspects of the subject.

613. General Morphology of Thallophytes and Bryophytes. Five credit hours. Autumn Quarter. Two lectures and three two-hour laboratory periods each week. Prerequisite, Botany 401-402. Mr. Blaydes.

A study of the classification and life histories of the algae, fungi, liverworts, and mosses. The laboratory work will consist of a study of the vegetative and reproductive structures of the several groups.

Not open to students who have credit for Botany 409.

614. General Morphology of the Pteridophytes and Spermatophytes. Five credit hours. Winter Quarter. Two lectures and three two-hour laboratory periods each week. Prerequisite, Botany 401-402. Miss Lampe.

A study of the comparative structures and life histories of the ferns, gymnosperms, and angiosperms, giving particular attention to the structure and development of seed plants.

Not open to students who have credit for Botany 410.

615. Plant Microtechnic. Five credit hours. Winter Quarter. Two lectures and three two-hour laboratory periods each week. Prerequisite, Botany 401-402 and two additional Quarters of biology. Mr. Blaydes.

Principles and methods of killing, fixing, imbedding, sectioning, staining, and mounting plant materials for microscopic study.

Not open to students who have credit for Botany 421.

617. Plant Microchemistry. Five credit hours. Autumn Quarter. One lecture and three two-hour laboratory periods each week. Prerequisite, Botany 605-606 or 415-416. Desirable antecedents, general inorganic and organic chemistry. Mr. Sampson.

The identification *in situ* of organic and inorganic substances found in plant tissues by microchemical methods. These methods are of special value in determining plant substances within the cells and in the study of physical and chemical changes accompanying plant processes and plant responses. This applies particularly to the numerous local regions in plants too small to be attacked by the test-tube method of tissue analysis.

619. Economic Botany. Five credit hours. Autumn Quarter. Four lectures and one two-hour laboratory period each week. Prerequisite, Botany 401-402 and one additional year of biological work. Desirable antecedents, commercial geography and plant ecology. Mr. Waller.

The world's food, fibre, and oil producing plants are studied in the light of their geographic distribution. The ecological and economic principles involved in plant production are discussed and centers of production are related to natural plant formations.

632. Physiological Methods. Three credit hours. Spring Quarter. Six hours of laboratory work each week. Prerequisite or concurrent, Botany 605-606, except by special permission of the instructor. Mr. Meyer.

Methods of measuring the physical factors of the environment that influence plant growth and development, both under laboratory and field conditions. Methods of growing plants under controlled conditions for experimental work. Conferences, readings, and laboratory work.

633. Physiological Methods. Three credit hours. Winter Quarter. Six laboratory hours each week. Prerequisite or concurrent, Botany 605-606, except by special permission of the instructor. Mr. Meyer.

A laboratory course in the methods of plant physiology such as measurements of H-ion concentration, osmotic values, permeability, enzyme activity and the processes of transpiration, respiration, and photosynthesis. Conferences, readings, and laboratory work.

634. Plant Growth. Three credit hours. Spring Quarter. Three lectures each week. Consult instructor before registering. Mr. Sampson.

A study of the physiology of growth. Special attention is given to the interrelated effects of internal and external factors upon growth, movement and reproduction of plants. Bibliographies and reviews of literature.

***635. Plant Genetics.** Five credit hours. Spring Quarter. Five recitations each week. Given in alternate years. Prerequisite, Botany 401-402, Zoology 403 and one additional Quarter of biological science. Mr. Waller.

The study of heredity in plants. Theories of the transmission of heritable characteristics. Research methods in the study of inheritance.

637. Plant Cytology. Five credit hours. Spring Quarter. Two lectures and three two-hour laboratory periods each week. Prerequisite, four Quarters of biology. Given biennially, alternating with Botany 640. Miss Lampe.

The structure, ontogeny, divisions, and fusions of plant cells.

***640. Plant Anatomy.** Five credit hours. Spring Quarter. Two lectures and three two-hour laboratory periods each week. Prerequisite, Botany 401-402 and two additional Quarters of biology. Given biennially, alternating with Botany 637. Mr. Camp.

The origin and development of the organs, and tissue systems of vascular plants, and comparative study of the structures of roots, stems, leaves, flowers, and fruits. This course is a desirable antecedent to advanced work in physiology and pathology.

653. Mycology. Five credit hours. Autumn Quarter. Three lectures and two two-hour laboratory periods each week. Prerequisite, Botany 401-402 and two additional Quarters of biology. Mr. Stover.

The identification of the fungi of woods and fields, including a number of edible and poisonous mushrooms, wood destroying and disease-producing fungi, and other important forms. The characteristic structures and life histories within each of the great groups are emphasized.

***665. Freshwater Algae.** Five credit hours. Winter Quarter. Prerequisite, six Quarters of biological work and consent of the instructor. Given biennially. Mr. Tiffany.

Conference, laboratory, and library course on the classification, morphology, and ecological relations of the freshwater algae.

701. Special Problems: Taxonomy, Morphology, Physiology, Cytology, and Anatomy. Two to five credit hours. Autumn, Winter, and Spring Quarters. Prerequisite, Botany 401-402 and two additional Quarters of some biological subject. The staff.

FOR GRADUATES

An undergraduate student shall not be permitted to take any course in the "800" group except by permission of the Graduate Council.

For description of graduate courses in this department see the Bulletin of the Graduate School.

CHEMICAL ENGINEERING

Office, 179, 180 Chemistry Building

PROFESSOR WITHROW, ASSISTANT PROFESSORS DUNCOMBE AND KOFFOLT, MR. VILBRANDT

Students who wish to carry additional courses in this Department are reminded that the College of Arts and Sciences permits thirty hours of work to be carried in courses offered in the Bulletins of other Colleges. See Bulletin of the College of Engineering for further courses in this Department.

FOR ADVANCED UNDERGRADUATES AND GRADUATES

According to the University regulations, courses in this group are not open to Freshmen or Sophomores.

701-702. Industrial Chemistry. Three credit hours. Autumn and Winter Quarters. Three lectures each week. Prerequisite or concurrent, physical chemistry, except with special permission of instructor. Mr. Withrow.

The fundamental lecture course in industrial chemistry, dealing with the problems of the chemical industries, and placing stress upon the economic questions involved in chemical manu-

* Not given in 1935-1936.

facturing, materials of plant construction, as well as the engineering operations involved in chemical engineering, and the principles underlying the applications of chemistry and engineering to a selected number of chemical industries. The work of the Autumn Quarter deals especially with the inorganic industries, while that of the Winter Quarter is related to the organic industries.

Elective in the Colleges of Arts and Education, and in the Graduate School.

706. Chemical Engineering and Industrial Chemistry Laboratory. Five credit hours. Autumn Quarter. One hour conference and five to fourteen laboratory hours each week. Prerequisite or concurrent, Chemical Engineering 701 and an acceptable course in analytical chemistry. Mr. Withrow, Mr. Vilbrandt, Mr. Koffolt, and assistants.

An introduction to industrial chemical research through assigned manufacturing problems, beginning with the general chemical industries. The specific problems are so chosen as to disclose the fundamental principles underlying the assigned industry and practice is afforded in the preparation of written reports. Opportunity is given for study of operating efficiency of certain engineering equipment utilized in the fundamental engineering operations of chemical engineering. Weekly inspection trips are taken to plants in and around Columbus for study and report upon equipment and operation. Great emphasis is laid upon methods of attacking problems and upon organization of reports. Certain types of problems with engineering equipment, in factory research and in applied electrochemistry, are required of all students, after which opportunity is given the student to select special problems in various portions of the fields of industrial chemistry and chemical engineering such as absorption systems, filtration, petroleum, and sugar technology, intermediates, wood distillation, insecticides, starch, lime, chlorine, and plant fume questions.

Elective in the Colleges of Arts and Education, and in the Graduate School.

707. Engineering Chemistry and Chemical Engineering Laboratory. Three credit hours. Winter Quarter. One conference and eight laboratory hours each week. Prerequisite, Chemical Engineering 706; concurrent, Chemical Engineering 702. Mr. Withrow, Mr. Vilbrandt, Mr. Koffolt, and assistants.

A continuation of Chemical Engineering 706. Special emphasis is laid upon technical methods of control, as applied to industrial chemical processes, and upon control of technical products according to standard A.S.T.M. methods and with standard equipment.

Elective in the Colleges of Arts and Education, and in the Graduate School.

FOR GRADUATES

An undergraduate student shall not be permitted to take any course in the "800" or "900" groups except by permission of the Graduate Council.

For description of graduate courses in this department see the Bulletin of the Graduate School.

CHEMISTRY

Office, 115 Chemistry Building
General Chemistry Office, 112 Chemistry Building

PROFESSORS EVANS, McPHERSON, HENDERSON, FOULK, BOORD, MACK, DAY, AND FRANCE, ASSOCIATE PROFESSORS BRODE, JOHNSTON, AND MOYER, ASSISTANT PROFESSORS HOLLINGSWORTH, WOLFROM, FERNELIUS, AND BACHMAN, MR. HARRIS, AND ASSISTANTS

(a) Freshman students entering the University for the purpose of majoring in Chemistry should consult the Curriculum in Chemistry, on page 45.

(b) Other students who intend to take their major work in chemistry should complete the following courses as a partial fulfillment of the minimum requirement of ninety hours in the Junior Division during their first six Quarters of residence in the University:

English 401, 430	10 hours
German (Preferred) 401-402-403-506 or French 401-402-403-404	20 hours
Social Science Sequence	15 hours
Mathematics 421-422-423 or 431-432-433	15 hours
Chemistry 401-402-403 or 411-412-413 and 421-422-423-424	28 hours
Total	88 hours

(c) In the first year the language requirement should be taken in successive Quarters in the following order: English 401-430; German 401 or French 401. The requirement in social sciences and Chemistry 401-402-403 or 411-412-413 should form a part of the first year's program. The other subjects should be taken in the second year.

(d) After having been admitted to the Senior Division of the College of Arts and Sciences, students desiring to continue with chemistry as their field of concentration must consult with the Faculty of the Department of Chemistry before making any arrangements with reference to the work of the junior and senior years. It should be pointed out that a proper sequence of courses in the Senior Division will include Chemistry 647-649 and 648-650 in the program of the third year and Chemistry 681-682-683 and Chemistry 691-692-693 in that of the fourth year.

401. Elementary Chemistry. Five credit hours. One Quarter. Autumn and Winter. One lecture, two recitations, and two two-hour laboratory periods each week. For students who do not present chemistry as an entrance credit. Mr. Evans, Mr. Day, Mr. Fernelius, Mr. Bachman, Mr. Harris, and assistants.

A general course in the chemistry of the non-metals. To be followed by Chemistry 402.

402. Elementary Chemistry. Five credit hours. One Quarter. Winter and Spring. One lecture, two recitations, and two two-hour laboratory periods each week. For students who do not present chemistry as an entrance credit. Prerequisite, Chemistry 401. Mr. Evans, Mr. Day, Mr. Fernelius, Mr. Bachman, Mr. Harris, and assistants.

A continuation of the study of the non-metals and a survey of the chemistry of the metals. To be followed by Chemistry 403.

403. Qualitative Analysis. Five credit hours. One Quarter. Autumn and Spring. One lecture, one recitation, and two three-hour laboratory periods each week. For students who do not present chemistry as an entrance credit. Prerequisite, Chemistry 402. Mr. Evans, Mr. Day, Mr. Fernelius, Mr. Bachman, Mr. Harris, and assistants.

A brief course in the systematic separation and identification of cations and anions.

411. General Chemistry. Five credit hours. One Quarter. Autumn and Winter. One lecture, two recitations, and two two-hour laboratory periods each week. Prerequisite, an acceptable course in high-school chemistry. Mr. Evans, Mr. Day, Mr. Fernelius, Mr. Bachman, Mr. Harris, and assistants.

A general course in the chemistry of the non-metals, more advanced than Chemistry 401. To be followed by Chemistry 412.

412. General Chemistry. Five credit hours. One Quarter. Autumn, Winter, Spring. One lecture, two recitations, and two two-hour laboratory periods each week. Prerequisite, Chemistry 411. Mr. Evans, Mr. Day, Mr. Fernelius, Mr. Bachman, Mr. Harris, and assistants.

A continuation of Chemistry 411, including the chemistry of the metals. To be followed by Chemistry 413.

413. Qualitative Analysis. Five credit hours. One Quarter. Autumn, Winter, Spring. One lecture, one recitation, and two three-hour laboratory periods each week. Prerequisite, Chemistry 412. Mr. Evans, Mr. Day, Mr. Fernelius, Mr. Bachman, Mr. Harris, and assistants.

A general course in qualitative analysis, dealing with the systematic separation and identification of the cations and anions. It also includes the application of the ionization theory, mass action law, and the principles of chemical equilibrium to qualitative analysis.

***415. Laboratory Technique.** Three credit hours. Winter Quarter. Laboratory work and general discussions. Prerequisite, one year of general chemistry. Mr. Hollingsworth.

Glass working, soldering, brazing, and practice in the construction of apparatus for teachers and students in the physical sciences. When known, the chemistry involved is also presented.

421-422-423. Quantitative Analysis. Three or four credit hours. Three Quarters. 421, Autumn and Winter; 422, Winter and Spring; and 423, Spring. One recitation and six or nine laboratory hours each week. Prerequisite, acceptable courses in general chemistry, including qualitative analysis. Mr. Moyer, Mr. Hollingsworth, and assistants.

The fundamental course in quantitative analysis. Chemistry 421 and 422 are devoted to gravimetric and volumetric analysis. Chemistry 423 is a continuation of these topics and includes colorimetric analysis, electrolytic precipitation, the determination of pH values and

* Not given in 1935-1936.

electrometric titration. Students from different colleges or students having different interests may choose exercises to meet their particular needs.

(a) Students in Chemistry, Chemical Engineering, and Pharmacy will take this course for four credit hours, in order to meet the prerequisites of subsequent courses. Other qualified students may elect four credit hours.

(b) Premedical, Medical, and other non-chemical students may take this course for three credit hours.

424. Problems in Quantitative Analysis. One credit hour. Spring Quarter. One quiz each week. Prerequisite, one Quarter of quantitative analysis. Mr. Moyer.

Simple problems in gravimetric and volumetric analysis.

451-452. Organic Chemistry. Five credit hours. Autumn and Winter Quarters. Three lectures and two laboratory periods each week. Predental course, second year. Prerequisite, one year of general chemistry, including qualitative analysis. Mr. Wolfrom and assistants.

A general introductory course in organic chemistry, including laboratory preparations, arranged for students preparing for Dentistry.

465. Quantitative Analysis. Five credit hours. Spring Quarter. One recitation and twelve laboratory hours each week. Prerequisite, acceptable courses in general chemistry. Mr. Hollingsworth and assistants.

The elementary principles of quantitative analysis arranged for students in the biological sciences or in other non-chemical fields, who desire an introduction to the technique of quantitative chemistry.

Not open to students who have credit for Chemistry 421-422-423 or 561.

466. Organic Chemistry. Three credit hours. Spring Quarter. Three lectures each week. Given in alternate years. Prerequisite, acceptable courses in general chemistry. Mr. McPherson.

A general survey of organic chemistry for students in the biological sciences, or in other non-chemical fields of learning.

Not open to students who have credit for Chemistry 441-442, 444-445, 451-452 or 562.

563. Physical Chemistry. Five credit hours. Spring Quarter. Three lectures and six laboratory hours each week. Prerequisite, an acceptable course in organic chemistry. Mr. Mack, Mr. France, Mr. Johnston, and assistants.

A brief study of the fundamental principles of physical chemistry arranged for students in the biological sciences or in other non-chemical fields, who wish to make a brief survey of physical chemistry.

FOR ADVANCED UNDERGRADUATES AND GRADUATES

According to the University regulations, courses in this group are not open to Freshmen or Sophomores.

621. Advanced Quantitative Analysis. Four or five credit hours. Autumn Quarter. One conference and nine or twelve laboratory hours each week. Prerequisite, acceptable courses in quantitative analysis. Mr. Foulk and assistants.

An extension of the first year's work in quantitative analysis, including electrometric titrations, colorimetric and turbidimetric analysis, and hydrogen ion determinations.

622. General Quantitative Analysis. Three credit hours. Winter Quarter. Three lectures or recitations each week. Prerequisite, acceptable courses in quantitative analysis. Mr. Foulk.

General principles of chemical analysis.

624. Advanced Qualitative Analysis. Five credit hours. Spring Quarter. Two recitations and nine laboratory hours each week. Prerequisite, acceptable courses in qualitative and quantitative analysis, or the permission of the instructor in charge. Mr. Foulk and assistants.

This course emphasizes the application of physico-chemical principles to the problems of qualitative analysis. The rarer elements are included in the laboratory exercises.

625. Water Analysis. Five credit hours. Spring Quarter. Three lectures and six laboratory hours each week. Prerequisite, acceptable courses in quantitative analysis. Mr. Foulk and assistants.

Methods of sanitary and industrial water analysis, and interpretation of the analytical results.

*627. **Industrial Water Problems.** Three credit hours. Winter Quarter. Three lectures or recitations each week. Given in alternate years. Prerequisite, acceptable courses in quantitative analysis. Mr. Foulk.

Chemistry of scale formation, foaming and priming in steam boilers, corrosion in hot and cold water systems, and the purification of water for industrial use.

641. **Qualitative Organic Analysis.** Three credit hours. Spring Quarter. One lecture and six laboratory hours each week. Prerequisite, acceptable courses in laboratory work in organic chemistry. Mr. Boord and assistants.

A study of the systematic methods of separation, purification, and identification of organic compounds.

642. **Quantitative Organic Analysis.** Three credit hours. Spring Quarter. One lecture and six laboratory hours each week. Prerequisite, acceptable courses in laboratory work in organic chemistry. Mr. Wolfrom and assistants.

Practice in the standard methods for the quantitative analysis of organic compounds, including combustion, and the quantitative estimation of organic radicals present in various compounds.

645-646. **Organic Chemistry.** Three credit hours. Autumn and Winter Quarters. Three lectures or recitations each week. Prerequisite, acceptable courses in general and analytical chemistry. Arts-Medicine and premedical groups. Mr. McPherson, Mr. Brode.

The fundamental course in organic chemistry. Chemistry 645 is devoted to a discussion of the aliphatic hydrocarbons and their derivatives and Chemistry 646 to a discussion of the coal tar compounds.

Not available for graduate credit for students majoring in chemistry.

Not open to students who have credit for Chemistry 451-452.

647-648. **Organic Chemistry.** Three credit hours. Autumn and Winter Quarters. Three lectures or recitations each week. Prerequisite, acceptable courses in general and analytical chemistry. Arts-Chemistry, Chemical Engineering, Education, and Pharmacy groups. Mr. Boord.

The fundamental course in organic chemistry. Chemistry 647 is devoted to a discussion of the aliphatic hydrocarbons and their derivatives and Chemistry 648 to a discussion of the coal tar compounds.

Not available for graduate credit for students majoring in chemistry.

Not open to students who have credit for Chemistry 451-452.

649-650. **Organic Chemistry: Laboratory.** Three credit hours. Autumn and Winter Quarters. Nine laboratory hours each week. Prerequisite or concurrent, Chemistry 645-646 or 647-648. Mr. Boord, Mr. Brode, and assistants.

The laboratory work naturally belonging with Chemistry 645-646 or 647-648. The preparation of a series of typical organic compounds, their purification, and a study of their properties.

Not available for graduate credit for students majoring in chemistry.

Chemistry 649 is not open to students who have credit for Chemistry 451-452.

654. **X-rays and Crystal Structure.** Three credit hours. Winter Quarter. Three lectures and recitations each week. Prerequisite, calculus and one year of college physics. Given in alternate years. Mr. Mack, Mr. Harris, Mr. Blake, Mr. McCaughey.

This course is designed for those students of physics, chemistry, and mineralogy who intend to do research work in crystal structures and X-ray analysis.

This course is the same as Mineralogy 654 and Physics 654.

Not open to students who have credit for Physics 814.

661. **Advanced Inorganic Chemistry.** Three credit hours. Autumn Quarter. Three lectures or recitations each week. Prerequisite, two years of courses in chemistry. Mr. Henderson, Mr. Fernelius.

An advanced course in inorganic chemistry with emphasis upon the fundamental topics of inorganic compounds, their preparation, classifications, and reactions.

* Not given in 1935-1936.

662. Advanced Inorganic Chemistry. Three credit hours. Winter Quarter. Three lectures or recitations each week. Prerequisite, two years of courses in chemistry. Mr. Henderson.

An advanced course in inorganic chemistry, stressing the more difficult points in chemical theory in the elementary courses.

663. The Rare Elements. Three credit hours. Spring Quarter. Three lectures each week. Prerequisite, Chemistry 661 or equivalent. Mr. Henderson.

Lectures on the chemistry of the less familiar elements, emphasizing their relations to the well-known elements, as well as their technical applications.

668. Non-aqueous Solvents. Three credit hours. Spring Quarter. Three lectures or recitations each week. Given in alternate years. Prerequisite, acceptable courses in physical chemistry. Mr. Fernelius.

A consideration of the solvent properties of various solvents, electrical conductance of non-aqueous solutions, the nature of acidity, systems of compounds and evidence obtained from studies of liquid ammonia solutions of metals and inter-metallic compounds, which contributes to an understanding of the nature of the metallic state.

672. Inorganic Chemistry: Laboratory. Three credit hours. Spring Quarter. Nine laboratory hours each week. Prerequisite, acceptable courses in general chemistry and quantitative analysis. Mr. Henderson, Mr. Fernelius.

a. **Inorganic Preparations.** Methods employed in the preparation of pure inorganic compounds. The chief classes of such compounds. The laboratory preparation of a number of examples sufficient to develop reasonable technique in applying the methods and to illustrate the classes.

b. **Rare Elements.** Laboratory work illustrative of the chemistry of the less familiar elements. The preparation of pure compounds of the rare elements using in many cases ores or industrial concentrates as starting materials.

c. **Advanced Techniques.** The use of some of the newer and more difficult techniques in the field of inorganic syntheses. These include the use of liquefied gases, low and high temperature apparatus, high pressure and high vacua apparatus, etc.

675. The Phase Rule. Two credit hours. Spring Quarter. Two meetings each week. Given in alternate years. Prerequisite, acceptable courses in physical chemistry. Mr. Henderson.

A study of the phase rule and its applications in chemical research.

681-682-683. Physical Chemistry. Three credit hours. Autumn, Winter, and Spring Quarters. Three lectures each week. Prerequisite or concurrent, acceptable courses in organic chemistry, physics, and calculus (two Quarters). Mr. Mack, Mr. France, Mr. Johnston and assistants.

The fundamental course in physical chemistry, arranged for students specializing in chemistry.

691-692-693. Physical Chemistry: Laboratory. Two credit hours. Autumn, Winter, and Spring Quarters. Six laboratory hours each week. Prerequisite or concurrent, an acceptable course in physical chemistry. Mr. Mack, Mr. France, Mr. Johnston, Mr. Brode and assistants

Introduction to physico-chemical measurements. Any one of these courses may be taken in any Quarter. The work may be selected from the following topics according to the needs of the student.

a. Fundamental physico-chemical measurements, such as molecular weight, surface tension, viscosity, vapor pressure, heat of reaction, velocity of reaction, transition points, etc.

b. Electro-chemical measurements, such as conductivity, transport numbers, electrode potentials, over-voltage, hydrogen ion concentrations, etc.

c. Colloid Chemistry.

d. Ultra-microscopy.

e. Application of spectroscopy to chemical problems.

695. Colloid Chemistry. Three credit hours. Winter Quarter. Three lectures or recitations each week. Prerequisite, acceptable courses in chemistry and physics. Mr. France.

A fundamental course in colloid chemistry.

696. Theoretical Electrochemistry. Three credit hours. Autumn Quarter. Three lectures or recitations each week. Prerequisite, acceptable courses in physical chemistry. Mr. France.

A fundamental course in theoretical electrochemistry.

701. Minor Problems in Chemistry. One to fifteen credit hours. Any Quarter. Conference, library, and laboratory work. Prerequisite, satisfactory courses in the field of the problem undertaken. A student may repeat this course and may spend all or any part of his time on it during a Quarter.

This course is designed to permit any properly qualified person to avail himself of the library and laboratory facilities of the department for carrying out a minor investigation or for adding to his knowledge and technique in some chemical subject.

A student may exercise entire freedom in his choice of instructor to conduct his work in this course, but, as a rule, topics in organic chemistry will be under the direction of Mr. McPherson, Mr. Evans, Mr. Boord, Mr. Brode, Mr. Wolfrom, Mr. Bachman; in inorganic chemistry, under Mr. Henderson, Mr. Day, Mr. Fernelius; in physical chemistry, under Mr. Mack, Mr. France, Mr. Day, Mr. Johnston, Mr. Fernelius, Mr. Harris; in analytical chemistry under Mr. Foulk, Mr. Hollingsworth, Mr. Moyer, Mr. Brode; and in colloid chemistry and electrochemistry, under Mr. France.

782. Chemical Bibliography. One credit hour. Autumn Quarter. One conference each week. Prerequisite, acceptable courses in analytical and organic chemistry. Mr. Henderson.

Designed to train the advanced student in the use of the chemical library, and to instruct him in the character of various chemical journals, dictionaries, reference books, and other sources of information pertaining to chemical subjects.

783. Chemical Biography. One credit hour. Winter Quarter. One lecture each week. Prerequisite, acceptable courses in analytical and organic chemistry. Mr. Henderson.

Designed to familiarize the advanced student with the leading personages in chemistry, particularly those of recent and contemporary times, as well as with the available sources of information relating to such personages.

FOR GRADUATES

An undergraduate student shall not be permitted to take any course in the "800" or "900" groups except by permission of the Graduate Council.

For description of graduate courses in this department see the Bulletin of the Graduate School.

NOTE: For Industrial Chemistry and Chemical Engineering Courses see the Department of Chemical Engineering.

NOTE: For courses in Physiological Chemistry, see the Department of Physiological Chemistry.

CLASSICAL LANGUAGES AND LITERATURE

Office, 217 Derby Hall

PROFESSORS HODGMAN (EMERITUS) AND BOLLING, ASSOCIATE PROFESSOR TITCHENER, MR. HOUGH, MR. ABBOTT

Attention is called to the fact that an undergraduate major is possible in the combined fields of Ancient History and Classical Languages. Students should consult Associate Professors McDonald and Titchener in planning a program.

GREEK

401. Elementary Greek. Five credit hours. Autumn Quarter. Five recitations each week. No prerequisite. Mr. Bolling, Mr. Titchener.

This course covers the outlines of the grammar with practice in the translation of simple selections (The First Year of Greek by J. T. Allen).

402. Elementary Greek. Five credit hours. Winter Quarter. Five recitations each week. Prerequisite, Greek 401 or its equivalent. Mr. Bolling.

Reading in Xenophon's Anabasis, review and continuation of the grammar.

403. Plato. Five credit hours. Spring Quarter. Four recitations and one lecture each week. Prerequisite, Greek 402. Mr. Bolling.

Reading in the easier dialogues; the personalities of Socrates and Plato and their work.

504. Homer. Five credit hours. Autumn Quarter. Four recitations and one lecture each week. Prerequisite, Greek 402. Mr. Bolling.

Reading in the Iliad and Odyssey; the epic poetry of Greece.

Not open to students who have credit for Greek 404.

FOR ADVANCED UNDERGRADUATES AND GRADUATES

According to the University regulations, courses in this group are not open to Freshmen or Sophomores.

601. Reading and Lectures. Three to five credit hours. One Quarter. Winter and Spring. Three to five meetings each week. Prerequisite, Greek 504 or the permission of the instructor. Mr. Bolling, Mr. Hough.

Study of the language, style, and works of some author or group of authors, chosen to meet the particular needs of the class. The course may consequently be repeated.

610. Private Reading and Minor Problems. Two to five credit hours. One Quarter. Autumn, Winter, Spring. Prerequisite, Greek 401. Mr. Bolling, Mr. Hough.

Passages for private reading and topics for investigation will be suggested to meet the needs of individual students.

660. Greek Literature in Translation. Three credit hours. Autumn Quarter. Three lectures each week. No prerequisite. Mr. Titchener.

A study of the history and development of Greek Literature, particularly the epic and drama, in English translation.

Not open to students who have credit for Greek 550.

701. Principles of the Historical Study of Language. Three credit hours. Spring Quarter. Three lectures each week. Mr. Bolling.

The elements of linguistic science together with an outline of the Indo-European family of languages.

720-721-722. Historical Greek and Latin Grammar. Three credit hours each Quarter. Autumn, Winter, and Spring Quarters. Prerequisite, ten credit hours of advanced work in the classics. Mr. Bolling.

NOTE: This course is the same as Latin 720-721-722.

LATIN

401. Elementary Latin. Five credit hours. Autumn Quarter. Five recitations each week. This course is for students who have not studied Latin. Mr. Abbott.

Grammar and exercises.

402. Elementary Latin and Caesar. Five credit hours. Winter Quarter. Five recitations each week. Prerequisite, Latin 401. Mr. Abbott.

Continuation of grammar and beginning Caesar.

403. Caesar. Five credit hours. Spring Quarter. Five recitations each week. Prerequisite, Latin 402. Mr. Abbott.

Continuation of Caesar.

405. Vergil. Five credit hours. Autumn Quarter. Five recitations each week. Prerequisite, Latin 401-403 or their equivalent in high school Latin. Students may enter this course with only two units of high school Latin, but are strongly advised to take Latin 403. Mr. Abbott.

Readings from the Aeneid.

406. Horace, Livy. Five credit hours. Autumn Quarter. Five recitations each week. Prerequisite, Latin 401-405 or three years of high school Latin. Mr. Titchener.

407. Livy, Horace. Five credit hours. Winter Quarter. Five recitations each week. Prerequisite, Latin 406. Mr. Titchener.

408. Latin Comedy. Five credit hours. Spring Quarter. Five recitations each week. Prerequisite, Latin 407. Mr. Hough.

Selected plays of Plautus and Terence.

501. Tacitus, Catullus. Three credit hours. Autumn Quarter. Three recitations each week. Prerequisite, Latin 407 or 408. Mr. Hough.

502. Letters of Pliny and Cicero, Martial. Three credit hours. Winter Quarter. Three recitations each week. Prerequisite, Latin 407 or 408. Mr. Hough.

Not open to students who have credit for Latin 504.

503. Ovid, Petronius. Three credit hours. Spring Quarter. Three recitations each week. Prerequisite, Latin 407 or 408. Mr. Hough.

505. Grammatical Review. Two credit hours. Winter Quarter. Two recitations each week. Prerequisite, Latin 408. Mr. Titchener.

This course must be taken concurrently with a translation course.

507. Roman Private Life. Three credit hours. Autumn Quarter. Three lectures each week. No prerequisite. Mr. Hough.

Lectures, illustrated with lantern slides on the daily life and customs of the Romans, their business and family relations, their amusements, dress, homes, and household furniture. A knowledge of Latin is not required for this course, and it is open to all students who are interested in the subject. Students below junior standing may be admitted by special permission.

508. Roman Art and Archaeology. Three credit hours. Winter Quarter. Three lectures each week. No prerequisite. Mr. Hough.

Lectures, illustrated with lantern slides, on the buildings and monuments of the ancient Roman world, with special reference to the city of Rome and its topography; also the architecture and decorative arts of the Romans, temples, palaces, private and public buildings, and their construction. A knowledge of Latin is not required for this course. Students below junior standing may be admitted by special permission.

***510. Medical Latin.** Three credit hours. One Quarter. Autumn and Spring. Prerequisite, two units of high school Latin. Class enrollment limited to twenty-five.

Intensive study of anatomical and medical Latin; intended for premedical and predental students in the College of Arts and Sciences.

FOR ADVANCED UNDERGRADUATES AND GRADUATES

According to the University regulations, courses in this group are not open to Freshmen or Sophomores.

602. Latin Satire. Three credit hours. Autumn Quarter. Three recitations each week. Prerequisite, Latin 408. Mr. Abbott.

Selections from the Satires of Horace or Juvenal.

604. Lucretius. Three credit hours. Spring Quarter. Three recitations each week. Prerequisite, one course more advanced than Latin 408. Mr. Abbott.

612. Latin Prose Composition: First Course. Three credit hours. Winter Quarter. Three recitations each week. Prerequisite, five Quarters of college Latin. Mr. Abbott.

Exercises and lectures on Latin idiom and style.

613. Latin Prose Composition: Second Course. One credit hour. One Quarter. Autumn, Winter, Spring. Three recitations each week. Prerequisite, Latin 612. Mr. .....

A continuation of Latin 612. Students are expected to take this course in three consecutive Quarters. Not more than three hours credit.

615. Proseminary I. Three credit hours. Winter Quarter. Three lectures each week. Prerequisite, six Quarters of college Latin. Mr. Titchener, Mr. Abbott, Mr. Hough.

Lectures on topics suggested by the study of Caesar and Cicero. Roman writing and Roman writing materials; readings from the Letters of Cicero. Latin 615 is designed especially for students preparing to teach Latin.

616. Proseminary II. Three credit hours. Spring Quarter. Three lectures each week. Prerequisite, six Quarters of college Latin. Mr. Titchener, Mr. Abbott, Mr. Hough.

Lectures on the life and works of Vergil, and his influence on modern literature; readings from the Eclogues and the Georgics. Latin 616 is designed especially for students preparing to teach Latin.

* Not given in 1935-1936.

627. Vulgar Latin. Three credit hours. Winter Quarter. Prerequisite, six Quarters of college Latin, or French 801, or consent of instructor. Mr. Abbott.

Lectures and the study of texts and inscriptions illustrating the development of the popular speech.

629. History of Literary Tradition. Three credit hours. Spring Quarter. Mr. Abbott.

Lectures and discussions dealing with the genesis and development of literary forms and motifs and their tradition down to the rise of modern literatures. The course will be so conducted that students of literature generally will be welcome.

631. Private Reading and Minor Problems. Two to five credit hours. One Quarter. Autumn, Winter, Spring. Prerequisite, one reading course more advanced than Latin 408. Mr. Titchener, Mr. Hough.

Passages for private reading and topics for investigation will be suggested to meet the needs of individual students.

635-636-637. Advanced Translation or Technical Courses. Three credit hours. Autumn, Winter, and Spring Quarters. Prerequisite, six Quarters of college Latin. Mr. Titchener, Mr. Hough, Mr. Abbott.

Selections will be made in accordance with the needs of the students from such types of literature as comedy, tragedy, epic, elegy, novel, history, political and oratorical writings, or such technical courses as paleography and epigraphy.

650-651-652. History of Roman Literature. Three credit hours. Autumn, Winter, and Spring Quarters. Prerequisite, three reading courses more advanced than Latin 408. The content of the readings within this course is so extensive that graduate students may repeat this course for credit. Mr. Titchener, Mr. Hough.

Lectures and assigned reading in literary histories on the development of Roman Literature; required and suggested passages for translation in each author studied; brief weekly reports.

720-721-722. Historical Greek and Latin Grammar. Three credit hours each Quarter. Autumn, Winter, and Spring Quarters. Prerequisite, ten credit hours of advanced work in the classics. Mr. Bolling.

NOTE: This course is the same as Greek 720-721-722.

FOR GRADUATES

An undergraduate student shall not be permitted to take any course in the "800" or "900" groups except by permission of the Graduate Council.

For description of graduate courses in this department see the Bulletin of the Graduate School.

COMPARATIVE LITERATURE AND LANGUAGE

Courses formerly offered under the above heading will be found under the Departments of Classical Languages and Literature, and German.

ECONOMICS

Office, 116 Commerce Building

PROFESSORS WOLFE, HAYES, WALRADT, DICE, AND HELD, ASSOCIATE PROFESSORS ZORBAUGH, SMART, BOWERS, DEWEY, AND JAMES, ASSISTANT PROFESSORS PATTON, WILLIT, HERBST, BITTERMANN, AND ROWNTREE, MISS STITT, MR. WHITSETT, MR. BOTTE, MR. STEVENS, AND ASSISTANTS

Students who wish to carry additional courses in this Department are reminded that the College of Arts and Sciences permits thirty hours of work to be carried in courses offered in the Bulletins of other Colleges. See Bulletin of the College of Commerce and Administration for further courses in this Department.

401-402. Principles of Economics. Five credit hours. Two Quarters. Both 401 and 402 are given Autumn, Winter, Spring. One lecture and four class meetings each week. Not open to Freshmen. Mr. Hayes and others.

A general survey of the economic relationships and processes in modern society; prices, money and banking, international trade, public utilities, trade unionism, taxation.

501-502. Economic History of the United States. Five credit hours. Autumn and Winter Quarters. Five class meetings each week. Prerequisite or concurrent, Economics 401-402. Preferably preceded or accompanied by History 403-404. Mr. Walradt, Mr. Patton.

A study of the economic development of our country including the growth of agriculture, shipping, manufacturing, banking, transportation, and trade. These involve a study of mercantilism, slavery, labor organizations, trusts and monopolies, and panics; also governmental policy relative to public land, the tariff, and ship-subsidies, immigration, and currency.

Not open to students who have credit for Economics 508 or 607-608.

503. The Evolution of Modern Capitalism. Five credit hours. Spring Quarter. Five class meetings each week. Prerequisite, Economics 400 or 401-402, or 501-502 or History 401-402. Mr. Smart.

A critical investigation of the evolution of the leading features of modern European capitalism, including a survey of the economic changes in the advanced industrial nations from the sixteenth century to the present. From the Industrial Revolution on, special emphasis is placed on the growth of the factory system, and changes in banking, transportation, labor and industrial organization.

Not open to students who have credit for Economics 636, 412 or 512.

509. Outlines of Public Finance. Five credit hours. One Quarter. Autumn, Winter, Spring. Five class meetings each week. Prerequisite, Economics 401-402, or 403-404, or 405 or 407. Mr. Walradt, Mr. Smart.

A survey of the entire field of public finance; expenditures, revenues, and debts. Especial attention will be given to the subject of taxation. This course is not a prerequisite to Economics 631-632-633 but it may not be taken by students who have had that course.

Not open to students who have credit for Economics 409.

510. Introduction to the Study of Labor Problems. Three credit hours. One Quarter. Autumn, Winter, Spring. Three class meetings each week. Prerequisite, Economics 401-402 or 403-404. Miss Herbst.

A general survey of the principal aspects of the position of the wage-earner in modern industry, emphasizing the social significance of wages, hours, working conditions, accidents, unemployment, trade unionism, and labor legislation.

Not open to students who have credit for Economics 410.

520. Money and Banking. Five credit hours. One Quarter. Autumn, Winter, Spring. Five class meetings each week. Prerequisite, Economics 401-402. Mr. Bowers, Mr. Willit, Miss Herbst, Mr. Bittermann, Mr. Stevens.

This course is intended as an introductory study to the more technical courses in banking and finance and also to give a comprehensive view of the field for those who are primarily interested in other subjects. The organization, operation, and economic significance of our monetary and banking institutions are discussed, with special reference to current conditions and problems.

Not open to students who have credit for Economics 610.

522. Elementary Economic Statistics. Three credit hours. One Quarter. Autumn, Winter, Spring. Two lectures and one two-hour laboratory period each week. Prerequisite, Economics 401-402 or 403-404, one unit of high school algebra, and one unit of high school geometry. Mr. Smart, Mr. Botte.

Emphasizes collection, presentation, analysis, and interpretation of economic and business data. Includes tabulation, graphic representation and application of averages, ratios, and the like to economic and business problems.

Not open to students who have credit for Economics 422 or 622.

FOR ADVANCED UNDERGRADUATES AND GRADUATES

According to the University regulations, courses in this group are not open to Freshmen or Sophomores.

616. Corporation Economics. Five credit hours. Autumn Quarter. Five meetings each week. Prerequisite, Economics 401-402. Mr. Hoagland.

A course in corporation organization and finance designed primarily for students outside of the College of Commerce and Administration.

Not open to students who have credit for or who are taking Business Organization 650.

618. Transportation Economics. Five credit hours. One Quarter. Autumn, Winter, Spring. Five class meetings each week. Prerequisite, Economics 401-402. Mr. Dewey, Mr. Rowntree, Mr. Whitsett.

A general survey of the history and regulation of inland transportation agencies, and a discussion of current problems of transportation and regulation, for students with a general interest in the field of economics as well as for those with a special interest in transportation.

624. Principles of Insurance. Three credit hours. Autumn Quarter. Three class meetings each week. Prerequisite, Economics 401-402. Mr. E. L. Bowers.

A study of the theory and practice of the principal types of insurance in the life, fire, and casualty fields. The economic theory of risk; loss prevention; state supervision, etc.

Not open to students who have credit for Business Organization 760.

625-626. Business Cycles and Economic Planning. Two credit hours. Autumn and Winter Quarters. Prerequisite, Economics 401-402. Mr. Dewey.

A general survey of changes in price levels and past and current theories of business cycles. Economic and social results of economic instability. The development of economic planning.

631-632-633. Public Finance. Three credit hours. Autumn, Winter, and Spring Quarters. Three class meetings each week. Prerequisite, Economics 401-402. Mr. Walradt, Mr. Smart.

A study of the problems connected with the debts, expenditures, revenues, and fiscal administration of national, state, and municipal governments.

634-635. International Economic Problems. Three credit hours. Autumn and Winter Quarters. Three class meetings each week. Prerequisite, Economics 401-402. Mr. James.

Theories of international trade and finance. Balance of international payments for important countries: war debts, export of capital, gold movements, etc. Broader aspects of international economic relations emphasized.

637. Labor Relations. Five credit hours. Autumn Quarter. Five class meetings each week. Prerequisite, Economics 401-402. Miss Herbst.

A study of the methods used by wage earners, employers, and the government to meet present-day labor conditions.

638. Labor Legislation. Three credit hours. Winter Quarter. Three class meetings each week. Prerequisite, Economics 401-402. Miss Stitt.

A study of society's efforts through legislation to improve the conditions of labor and to increase its bargaining power. Legislation and court decisions affecting the labor of men, women, and children, hours, wages, working conditions, immigration, convict labor, trade union activities, and industrial disputes.

639. Social Insurance. Three credit hours. Spring Quarter. Three class meetings each week. Prerequisite, Economics 401-402. Miss Stitt.

Efforts to guarantee to the worker security. Accident insurance; employers' and workmen's compensation; health hazards and health insurance. Old age insurance and pensions; unemployment and its prevention; unemployment insurance. Compulsory automobile insurance.

643. Woman in the Modern Economic World. Four credit hours. Autumn Quarter. Four class meetings each week. Given in alternate years. Prerequisite, Economics 401-402. Miss Stitt.

A study of the relation of women to the present economic order, and of the social, economic, industrial and legal problems associated therewith.

645. Principles of Economic Consumption. Three credit hours. Winter Quarter. Three class meetings each week. Prerequisite, Economics 401-402. Miss Zorbaugh.

Critique of consumption facts and problems, and of consumers' welfare. Theories of consumers' economic role. Some existing and proposed means—private and public—of controlling consumption.

NOTE: See Survey 664, Bulletin of the College of Education.

648. Public Utility Economics. Five credit hours. Autumn Quarter. Five class meetings each week. Prerequisite, Economics 401-402. Mr. Dewey.

A course complementary to Economics 618, with special emphasis on local public utilities, including water, gas, electric light and power, telephone and telegraph, etc. The history and present status of regulation and the leading problems arising therefrom, including supervision

of holding companies, valuation, reasonableness of rates, adequacy and economy of service, etc. Public ownership versus public regulation.

651. International Commercial Policies. Three credit hours. Spring Quarter. Three class meetings each week. Prerequisite, Economics 401-402. Mr. Held.

The theory of international trade; historic policies; mercantilism; free trade and protection. A study of the tariff policy of the United States with a comparative study of the policies of other countries. International trade as affected by the World War.

656. The Distribution of Wealth and Income. Three credit hours. Autumn Quarter. Three class meetings each week. Prerequisite, Economics 401-402. Mr. Hayes.

Analyses of the process by which wages, interest, rent, and profit are determined; proposals for altering same.

658-659. Population. Three credit hours. Autumn and Winter Quarters. Three class meetings each week. Prerequisite, Economics 401-402. Mr. Wolfe.

The growth and distribution of population. The relation of numbers to resources, productive capacity, standard of living, prosperity and international economic problems. The dynamic aspects of population in relation to material and moral progress. Critical consideration of population theories and policies.

667. Socialism. Three credit hours. Winter Quarter. Three class meetings each week. Prerequisite, Economics 401-402. Mr. Hayes.

Survey of socialistic movements and doctrines.

Not open to students who have credit for Economics 657.

668. Capitalism and Socialism in Present-day Europe. Three credit hours. Spring Quarter. Prerequisite, Economics 401-402. Mr. Hayes.

Revolutionary and reform movements in Europe with special attention to Russia, Germany, and Italy.

Not open to students who have credit for Economics 869.

700-701-702. Honors Courses. One to five credit hours. Autumn, Winter, and Spring Quarters. Open by permission of the chairman of the department. All instructors.

(a) A program of reading arranged for the undergraduate student, with individual conferences and reports. Prerequisite: (1) senior standing; (2) the record of "A" in at least half of his Economics courses and an average of "B" in the remainder; (3) permission of the professor under whose supervision the work is given. Candidates for a degree with distinction in Economics (see page 34) must enroll for this course for at least two Quarters. Mr. Hayes, with the cooperation of other members of the department.

(b) A program of reading open to graduate students in lieu of scheduled courses or supplementary to study provided in regular courses.

FOR GRADUATES

An undergraduate student shall not be permitted to take any course in the "800" or "900" groups except by permission of the Graduate Council.

For description of graduate courses in this department see the Bulletin of the Graduate School.

ENGLISH

Office, 121 Derby Hall

EXECUTIVE COMMITTEE: PROFESSOR PERCIVAL, ASSOCIATE PROFESSORS WALLEY AND FULLINGTON

PROFESSORS DENNEY (EMERITUS), McKNIGHT, GRAVES, BECK, KETCHAM, PERCIVAL, WILEY, AND HATCHER, ASSOCIATE PROFESSORS WALLEY, HARBARGER, SNOW, WILSON, AND FULLINGTON, ASSISTANT PROFESSORS CRAIG, MILLER, NEWDICK, AND POLLOCK, MISS DENTON, MR. DUMBLE, MR. EDWARDS, MR. EMSLEY, MR. ESTRICH, MR. GRAHAM, MR. HABER, MR. HILDRETH, MR. KANE, MR. MAURER, MR. RILEY, MISS SNIFFEN, MR. SNYDER, AND ASSISTANTS

JUNIOR DIVISION

English 401 and 430 are open to Freshmen. English 440 or 450 may be taken by Freshmen who have been in residence two Quarters or by those who have credit for 401 and 430.

(a) Courses in writing should be chosen in the following order: 401, 507, 643, 657, 658.

(b) Courses in literature should be chosen in the following order: 430, 440, 450.

(c) One course in language is open to Sophomores, 528.

REVIEW COURSE IN ENGLISH COMPOSITION

During or preceding the first two class sessions in English 401, writing tests will be given to determine the ability of students to use the English language effectively. Students found with less than expected ability will be dropped from the regular classes and assigned to review sections in English fundamentals, without credit, for one Quarter. A fee of $5.00 will be charged to cover the cost of tutorial instruction.

PROFICIENCY IN ENGLISH LITERATURE

Qualified students may confer with the supervisor of English 430 regarding the taking of individual proficiency examinations leading to advanced standing in English.

SENIOR DIVISION

Students who intend to take advanced courses in English or to major in English should observe the following regulations.

1. English 401, 430, and 440 are prerequisite for all 500, 600, and 700 courses. English 450 is also prerequisite for the drama courses (English 670, 676, 677) and for the following courses in the Dramatics Group: English 680, 682, 686, 687. In general, English 507 is prerequisite for all writing courses in the 600 group. English 528 is recommended, but not required, of students who intend to take the advanced courses in language (English 627, 646, 651). Exceptions are sometimes made through the College office for students with transfer credit.

2. Students majoring in English must complete three courses in one of the following Cycles:
   - Cycle I. The Middle Ages. English 652, 653, 654.
   - Cycle II. The Renaissance. English 674, 676, 671, 677.
   - Cycle III. The Age of Enlightenment. English 635, 636, 637.
   - Cycle IV. The Age of Democracy. English 641, 642, 644.
   - Cycle V. English Language. English 651, 646, 627.

In general, the student is urged to complete the chosen Cycle within a year and to take the courses in the Cycle in the order indicated above. However, courses may be taken in any order (except Cycle IV, where the order must be followed), and the time may be extended over two years. Every Cycle must be concluded by a proseminary (English 700), in which specialized elements or aspects of the field covered by the Cycle will be studied. Upon the completion of the three Cyclical courses and the Proseminary, the student must take a comprehensive examination over the field covered by the Cycle and over a number of books to be read out of course.

Courses in the Cycles may be elected by qualified students as freely as any other courses. Students electing any Cycle may choose at will from the general elective courses and the courses in the other Cycles. Students not majoring in English need pay no attention to the Cycles.

401. Composition and Reading. Five credit hours. One Quarter. Autumn, Winter, Spring. Required in the College of Arts and Sciences. Director, Mr. Fullington.

A course in the effective reading and writing of the types of expository prose generally required in college courses. Discussion and practice.

Admission to the Senior Division of the College of Arts requires a final grade of "C" or better in English 401. A student whose final grade is lower than "C" should immediately consult with the College office.

Not open to students who have credit for English 410 and 411.

430. Introduction to Literature. Five credit hours. One Quarter. Autumn, Winter, Spring. No prerequisite. Not open to Juniors and Seniors. Director, Mr. Fullington.

A course primarily for first-year students, designed to develop intelligent appreciation and enjoyment of literature and to encourage the growth of good taste and judgment through intimate contact with the best contemporary verse and prose. Special attention will be given to developing a basic knowledge of literary technique, as displayed in the novel, drama, and poetry.

440. Masters of Modern Literature. Five credit hours. One Quarter. Autumn, Winter, Spring. Required as a prerequisite for all "600" courses in English. Prerequisite, English 401 and 430. Mr. Beck, Mr. Percival, Mr. Wilson, Mr. Fullington, Mr. Snow, Mr. Newdick, Mr. Pollock.

An intensive study of the work of four or five authors who have made distinctive contributions to the literature or thought of modern times, to be selected from these authors: Frost, Dreiser, O'Neill, Crane, Eliot, Chekov, Mann, Galsworthy, Maugham, Bennett, Wells, Woolf, Masefield, Conrad.

The course is intended to acquaint the student with the means of a more thorough appraisal of a man and his writing than is possible by cursory unrelated reading.

450. Introduction to Shakespeare. Five credit hours. One Quarter. Autumn, Winter, Spring. Prerequisite, English 401 and 430. Mr. Walley, Mr. Wilson.

An intensive study of selected plays. Emphasis is placed upon the understanding and appreciation of Shakespeare's dramatic and poetic art.

Not open to students who have credit for English 667-668.

PREREQUISITES FOR "500" AND "600" COURSES

Unless otherwise indicated, the prerequisites for "500" and "600" courses are English 401, 430, and 440.

507. Advanced Composition. Five credit hours. One Quarter. Autumn, Winter, Spring. Prerequisite, English 401 and 430. Mr. Graves, Mr. Beck, Mr. Craig.

Intensive study of the art of descriptive and narrative writing and of the artistic forms of the essay, through lectures, quizzes, readings, and practice.

Not open to students who have credit for English 405, 607, or 407.

528. English Words. Three credit hours. One Quarter. Winter and Spring. Prerequisite, English 401. Mr. McKnight.

Dialect, slang, and technical words and their relation to standard English words. The foreign sources of borrowed words and the time of borrowing. The relationship between words and their meanings. Culture history associated with the history of word meanings.

Not open to students who have credit for English 428.

529. The English Bible. Five credit hours. Winter Quarter. Mr. Fullington.

A study of the King James version of the Bible as a masterpiece of world literature and an English classic. A brief survey of the English translations, and their place and influence in English literature; a careful consideration of the narrative, prophetic, and poetic books of the Old Testament and of the Gospels viewed purely from the point of view of literature.

Not open to students who have credit for English 629 or 429.

FOR ADVANCED UNDERGRADUATES AND GRADUATES

According to the University regulations, courses in this group are not open to Freshmen or Sophomores.

605. Studies in Criticism. Three credit hours. Autumn Quarter. Mr. Beck.

A study of the chief figures in English literary criticism from Sidney to the present time. Supplementary readings in the critical writings of Aristotle, Horace, Longinus, and others who have influenced English criticism.

Not open to students who have credit for English 805.

608. American Literature. Five credit hours. Winter Quarter. Mr. Pollock.

A study of the development of the literary arts in America. Major poets, dramatists, essayists, and writers of fiction will be considered as products of American society, and significant examples of their work will be studied critically as artistic creations.

627. History of the English Language. Three credit hours. Autumn Quarter. Lectures, quiz, and reports. Required of students majoring in English and graduate students who elect Cycle V. Mr. McKnight.

A brief study of the English language prior to Chaucer, followed by a more detailed study of the later development of the language and the way it became standardized in grammar and vocabulary. Especial attention is paid to the modern period, to the history of pronunciation and spelling and the development of the rules which govern modern English usage.

Not open to students who have credit for English 427.

635. Dryden to Pope. Five credit hours. Autumn Quarter. Required of students majoring in English and graduate students who elect Cycle III. Mr. Wilson.

The origin and development of neo-classicism with reference to French influences. Satire and controversy in Dryden, Pope, Swift, and their contemporaries. The drama of the Restoration and Queen Anne. The circle of the court of Charles II. The periodical essayists.

636. Pope to Blake. Five credit hours. Winter Quarter. Required of students majoring in English and graduate students who elect Cycle III. Mr. Percival.

The course of the Enlightenment with reference to continental types and ideals. The break-

down of neo-classicism and the rise of romanticism. The novels of Fielding, Richardson, Sterne, and Smollett. The plays of Goldsmith, Sheridan, and others. The later poetry of Pope and of Goldsmith, Gray, Burns, and Blake.

637. Men and Manners of the Enlightenment. Five credit hours. Spring Quarter. Required of students majoring in English and graduate students who elect Cycle III. Mr. Percival.

A study of the minds, personalities, and social backgrounds of men who revealed themselves through letters, memoirs, autobiographies, and biographies. Pepys, Chesterfield, Johnson (through Boswell), Walpole, and Franklin.

641. The Romantic Era. Five credit hours. One Quarter. Autumn, Winter, Spring. Prerequisite, English 440. Required of students majoring in English and graduate students who elect Cycle IV. Mr. Beck, Mr. Snow, Mr. Hatcher.

The influence of the French Revolution and the preeminence of the Romantic ideal. Wordsworth, Coleridge, Byron, Shelley, Keats, Hazlitt, Lamb, DeQuincey, Scott, and Jane Austen.

Not open to students who have credit for English 441.

642. The Victorians. Five credit hours. One Quarter. Autumn, Winter, Spring. Lectures, quiz, readings. Prerequisite, English 440. (For students majoring in English who elect Cycle IV, prerequisite, English 641.) Required of students majoring in English and graduate students who elect Cycle IV. Mr. Beck, Mr. Pollock.

The spirit and temper of the Victorian period as seen in the poetry of Tennyson and Browning, the essays of Carlyle and Ruskin, the novels of Dickens, Thackeray, and Eliot.

Not open to students who have credit for English 442.

643. Literature and Composition. Five credit hours. Spring Quarter. Three lectures with conferences on individual work each week. Special permission necessary. Mr. Snow.

Ten recent writers, Galsworthy, Conrad, Hemingway, James, Cather, Mansfield, Aldous Huxley, Cabell, Anderson, and Woolf will be read and discussed as a basis for creative and critical writing, and as illustrative of tendencies in contemporary writing. The course is primarily a composition course. Conferences on individual work.

Not open to students who have credit for English 543.

644. The Late Victorians. Five credit hours. One Quarter. Autumn, Winter, Spring. Prerequisite, English 440. (For students majoring in English who elect Cycle IV, the prerequisite is English 642.) Required of students majoring in English and graduate students who elect Cycle IV. Mr. Pollock, Mr. Newdick, Mr. Snow.

The transition from the Victorian to the modern period. The scientific contribution of Darwin and Huxley; the religious unrest of Arnold; the Pre-Raphaelites: Rossetti, Morris, Swinburne; the Aesthetes: Pater, Wilde; the Symbolists: Yeats; the rationalism of Meredith; the pessimism of Hardy; the tentative solutions of the pre-war moderns.

646. Middle English. Three credit hours. Winter Quarter. Required of students majoring in English and graduate students who elect Cycle V. Prerequisite, English 651. Mr. Emsley.

This course deals with the transition from the highly inflected Anglo-Saxon to the comparatively free idiom of modern English; with the influence of Old French; and with the emerging of standard English from the older dialects. The reading is done in the original with emphasis on the standard dialect.

651. Old English Prose and Poetry. Five credit hours. Autumn Quarter. Required of students majoring in English and graduate students who elect Cycle V. Mr. McKnight.

Attempt is made to link English with the kindred Germanic languages and by means of the words and constructions of early English to explain the nature of English in use today.

652. Early Ballads, Lyric and Drama. Five credit hours. Autumn Quarter. Required of students majoring in English and graduate students who elect Cycle I. Given in alternate years. Mr. McKnight.

A study of popular songs and ballads and of the first stages in the history of the English drama.

653. Chaucer and his Period. Five credit hours. Winter Quarter. Required of students majoring in English and graduate students who elect Cycle I. Mr. McKnight.

Reading of Chaucer's principal works along with selections from the writings of Gower, Wycliffe, Langland, the Sir Gawain poet, Occleve, Lydgate, James I of Scotland, Henryson, Dunbar, Shelton, Hawes.

***654. English Medieval Literature to Chaucer.** Five credit hours. Autumn Quarter. Given in alternate years. Required of students majoring in English and graduate students who elect Cycle I. Mr. McKnight.

A study by means of modern English renderings of epic poetry in early English and the related epic stories in other literatures, followed by a study of legends, lays, and romances. Arthurian romance is made a central feature.

655. The Novel. Five credit hours. Winter Quarter. Mr. Hatcher.

A study of the novel, not as an historical survey, but as an individual art form through which creative minds have expressed themselves in the last century.

657. Versification. Five credit hours. Spring Quarter. Prerequisite, four Quarters in English. Special permission necessary. Class enrollment limited to twenty-five. Mr. Graves.

The theory of verse structure with a history of the principal English verse rhythms and forms, and practice in verse composition.

658. The Short Story. Five credit hours. Winter Quarter. Prerequisite, English 405, 507, or 607. Special permission necessary. Class enrollment limited to thirty. Mr. Graves.

Lectures on structure and form in the short story, extended reading and reports, practice in story writing.

664. The Literary Revival in Ireland. Five credit hours. Spring Quarter. Four meetings each week and a fifth at the option of the instructor. Class enrollment limited to twenty. Mr. McKnight.

Subjects for study: Ossianic literature of the eighteenth century and the modern Irish revival. Attention is paid to works by Lady Gregory, W. B. Yeats, A.E., George Moore, Fiona Macleod, J. M. Synge, James Stephens, Lennox Robinson, James Joyce, and others.

670. Recent and Contemporary Drama. Five credit hours. Spring Quarter. Four meetings each week with special reading in lieu of the fifth meeting. Prerequisite, English 440 and 450. Mr. Hatcher.

The social, intellectual, and scientific forces characteristic of recent times reflected in the artistic medium of the plays of Ibsen, Strindberg, Hauptmann, Wedekind, Kaiser, Toller, Chekov, Gorky, Andreyev, Brieux, Rostand, Maeterlinck, Vildrac, Capek, Molnar, Schnitzler, Pirandello, Benavente, Wilde, Shaw, Galsworthy, O'Casey, Milne, Howard, Rice, Barry, O'Neill, and others.

671. Seventeenth Century Literature. Five credit hours. Winter Quarter. Mr. Walley.

Non-dramatic literature of the later Renaissance. The growth of scientific curiosity and skepticism. The ascendancy of classical ideals. Religious reaction and Puritanism. The poetry of Milton, Donne, Jonson, Herrick, and the poets of church and court. The prose of Bacon, Burton, Browne, Walton, Bunyan, the character writers and essayists.

Not open to students who have credit for English 659.

674. The English Renaissance. Five credit hours. Winter Quarter. Mr. Hatcher.

The tone and temper of the Renaissance abroad. Its development in English literature (excluding drama) from the early humanists to the death of Elizabeth; the growth of lyric poetry, the sonnets, the rise of English prose, the Tudor translations, the books of travel, the poetry of Spenser.

676. Shakespeare. Five credit hours. Autumn Quarter. Prerequisite, English 450. Mr. Walley.

A critical consideration of the art, personality, and achievement of Shakespeare in the light of Renaissance culture. Reading and interpretation of the complete works with particular attention to the major problems of Shakespearean scholarship.

* Not given in 1935-1936.

677. Elizabethan Drama. Five credit hours. Spring Quarter. Prerequisite, English 450. Mr. Walley.

An historical and critical study of English popular drama (exclusive of Shakepeare) and of the theater from the beginning of the reign of Elizabeth to the closing of the theaters in 1642.

***680. Influence of Theater on Drama.** Three credit hours. Autumn Quarter. Prerequisite, English 450; English 670 recommended. Given in alternate years. Mr. Miller.

The ways in which playhouses, actors, and audiences have influenced the work of the dramatists. Particular emphasis is placed on these factors in the development of the theater in England.

682. Playwriting. Five credit hours. Autumn Quarter. Prerequisite, English 450 and 670. Given in alternate years. Mr. Miller.

Studies in the technique of the drama and exercises in creative writing for the theater. Particular attention is given to the one-act play. In special cases an opportunity is afforded to test original plays in actual production by the Dramatics Workshop.

Not open to students who have credit for English 822.

685. Stagecraft. Five credit hours. Autumn Quarter. Three hours lecture and four hours laboratory each week. Mr. Miller.

This is a practical course designed to supply the technical foundation for courses 686 and 687. It involves a study of the resources of the modern stage along with exercises in the construction and manipulation of scenery, lighting equipment, and accessories.

686. Play Direction. Five credit hours. Winter Quarter. Three hours lecture and four hours laboratory each week. Prerequisite, English 450 and 685; prerequisite or concurrent, English 670. Registration limited. Special permission of the instructor is necessary. Mr. Miller.

This course considers how the values of the written play are translated into terms of theatrical production. Character grouping, movement, and stage business are considered in relation to control of attention, suspense, and climax. Opportunity is provided for some practical experience in play direction.

Not open to students who have credit for English 675.

687. Play Production. Five credit hours. Spring Quarter. Prerequisite, English 686. Registration limited by special permission of instructor. Mr. Miller.

This course considers the organization of little theater groups and methods of procedure. Various theories of play production are considered and applied to a selected list of plays. The student plans and directs the production of at least one one-act play.

Not open to students who have credit for English 679.

700. Proseminary. Five credit hours. Spring Quarter. Two one-hour sessions each week. Required of Seniors majoring in English in any Cycle. Prerequisite, three courses in one cycle or two courses and the third concurrent, and senior standing. Cycle I and V, Mr. McKnight; Cycle II, Mr. Walley; Cycle III, Mr. Percival; Cycle IV, Mr. Hatcher.

Specialized study in elements or aspects of the field leading to individual reports. Topics for study to be arranged.

Not open to graduate students.

†701. Minor Problems in English. One or more credit hours. Prerequisite, at least senior standing and the approval of the instructor. Mr. Percival, Mr. Hatcher, Mr. Wilson, Mr. Pollock.

705-706-707. Honors Courses. Three to ten credit hours. Autumn, Winter, and Spring Quarters. A program of reading arranged for each student, with individual conferences and reports. Prerequisite: (1) full Senior standing; (2) the record of "A" in at least half of his English courses and an average of "B" in the remainder; (3) the special permission of the professor under whose supervision the work is desired. The usual credit in this course is three hours, and more will be allowed only to candidates for distinction in English who have in their Junior year passed with high grades a program approved by the Committee on Honors. Director, Mr. Snow.

* Not given in 1935-1936.

† Not given during the academic year, 1935-1936.

FOR GRADUATES

An undergraduate student shall not be permitted to take any course in the "800" or "900" groups except by permission of the Graduate Council.

For description of graduate courses in this department see the Bulletin of the Graduate School.

PUBLIC SPEAKING

401. Principles and Practice of Public Speaking. Five credit hours. One Quarter. Autumn, Winter, Spring. Prerequisite, English 401. Mr. Ketcham, Mr. Wiley, Miss Denton, Mr. Riley and assistant.

The principles of speech composition and delivery. Audience analysis and control. Practice in preparing and presenting short informative, entertaining, and persuasive speeches.

402. Debating. Five credit hours. One Quarter. Autumn, Winter, Spring. Prerequisite, English 401. Miss Denton, Mr. Wiley.

A study of the principles of persuasive speaking as applied to debating. Preparation of briefs and presentation of oral arguments in short class debates. Intercollegiate debaters are selected from this group.

FOR ADVANCED UNDERGRADUATES AND GRADUATES

According to the University regulations, courses in this group are not open to Freshmen or Sophomores.

610. Advanced Debate Practice. Five credit hours. One Quarter. Autumn and Winter. Two practice periods and special meetings each week. Special permission necessary. Miss Denton, Mr. Glander.

An advanced course for students who show special ability in debate.

Not open to students who have credit for Public Speaking 410.

625. The Forms of Public Address. Five credit hours. Spring Quarter. Prerequisite, Public Speaking 401-402. Mr. Ketcham.

A study of the methods by which speech is made clear, interesting, and forceful. Practice in using these methods in the preparation and delivery of short public addresses. A broad view of language training is given with the object of increasing the student's command of thought in writing and talking as well as in public speaking.

Not open to students who have credit for Public Speaking 525.

651. Special Problems in the Theory of Public Speaking. Five credit hours. Spring Quarter. Prerequisite, ten hours in public speaking. Mr. Ketcham.

Each student selects one problem for investigation. Subjects from which this selection may be made include comparative methods of preparation and delivery, special investigations in rhetorical principles and history, word analysis, criticism, appreciation, ideals and aesthetic standards in public speaking. Individual conferences.

ENTOMOLOGY

(See Zoology and Entomology)

EUROPEAN HISTORY

(See History)

FINE ARTS
Office, 104 Hayes Hall

PROFESSORS HOPKINS, FANNING, PAYANT, LYNCH, BAGGS, AND ROBINSON, ASSOCIATE PROFESSORS FREY AND WISER, ASSISTANT PROFESSORS ATHERTON, RANNELLS, BRADLEY, SHERMAN, SUTTON, BATCHELDER, AND GRIMES, MR. MITTS, MR. GATRELL, MR. ZEPP, MR. LITTLEFIELD, AND ASSISTANTS

Courses in Fine Arts are suggested for different classes of students as follows:

Students not majoring in Fine Arts, who wish training in drawing, design, painting or modelling, should take 421, 423, 431 early in their course. Students desiring work in the history of art may take 451-452-453, after their Freshman year.

For students who have no other opportunity of acquainting themselves with art, 479 is recommended.

Supplementary studies for work in the fine arts are languages, especially French, history, psychology, and philosophy.

Students who wish to carry additional courses in this Department are reminded that the College of Arts and Sciences permits thirty hours of work to be carried in courses offered in the Bulletins of other Colleges. See Bulletin of the College of Education for further courses in this Department.

Courses in the "600" group are open to advanced undergraduates and graduates.

FREEHAND DRAWING

401-402-403. Freehand Drawing. Two credit hours. Autumn, Winter, and Spring Quarters. Two three-hour laboratory periods each week. Mr. Mitts, Mr. Rannells, Mr. Zepp, Miss Bradley, Mr. Grimes, Mr. Gatrell.

An elementary course in the principles and practice of expression by freehand drawing. Emphasis upon proportion, perspective, and values in monochrome.

Not open to students who have credit for Fine Arts 421 or 423.

421. Elementary Freehand Drawing. Five credit hours. One Quarter. Autumn, Winter, Spring. Five two-hour laboratory periods each week. Mr. Mitts, Mr. Gatrell.

A technical course in the principles of drawing, with special regard for directness and facility. Practice in freehand perspective and values in monochrome. Clay modelling.

423. Advanced Freehand Drawing. Five credit hours. One Quarter. Autumn, Winter, Spring. Four three-hour laboratory periods each week, with weekly problems. Prerequisite, Fine Arts 421 or 401-402-403. Mr. Rannells, Mr. Mitts.

Drawing from still life and the antique as a means of expression, emphasizing the various possibilities and limitations of the black and white mediums, with problems in composition.

424. Drawing from Life. Five credit hours. One Quarter. Autumn, Winter, Spring. Five three-hour periods each week, with weekly problems. Prerequisite, Fine Arts 423 and 431. Mr. Gatrell.

Drawing from the living model with lectures and problems in surface anatomy.

505. Advanced Life Drawing. Five credit hours. One Quarter. Autumn, Winter, Spring. Five three-hour periods each week, with weekly problems. Prerequisite, Fine Arts 424. Mr. Sherman.

Drawing from life with lectures and problems in figure composition.

Not open to students who have credit for Fine Arts 425.

DESIGN

431. Elementary Design. Five credit hours. One Quarter. Autumn, Winter, Spring. Five two-hour laboratory periods each week. Mr. Payant, Mr. Atherton, Miss Batchelder.

The principles of pure design, with practice in the presentation of organic design problems. Lectures, conferences, and technical work.

432. Intermediate Design. Five credit hours. One Quarter. Autumn, Winter, Spring. Five three-hour periods each week, with outside requirements. Prerequisite, Fine Arts 421 and 431. Mr. Payant.

Special problems in design, theory, and presentation. Ceramic, textile, metallic, stone, wood, and combined materials are considered for decorative and structural elements.

COMMERCIAL ART

533. Commercial Design. Five credit hours. Winter Quarter. Three three-hour periods each week, with weekly problems. Prerequisite, Fine Arts 432 and 505. Mr. Rannells.

A general course serving as an introduction to the various phases of the commercial art field—advertising layout; methods of agencies, newspapers, etc.; engraving processes; making drawings for reproduction; principles of lettering; the use of various mediums, including pen, crayon, brush, wash drawings, and color.

Not open to students who have credit for Fine Arts 433.

535-536-537. Illustrative Drawing. Five credit hours. Autumn, Winter, and Spring Quarters. Prerequisite, Fine Arts 505 and 441 or 442. Mr. Grimes.

Practice in illustrative drawing with study of the technique of pen and ink, pencil, wash, and other mediums. Problems in pictorial composition.

Not open to students who have credit for Fine Arts 435.

PAINTING

441. Water Color Painting. Five credit hours. One Quarter. Autumn and Spring. Five three-hour periods each week. Prerequisite, Fine Arts 431. Miss Bradley.

Painting from still life, models, and landscape. The purpose of this course is to develop the color sense and ability in the technique of water color painting. Lectures, laboratory work, and criticism.

442. Oil Painting. Five credit hours. One Quarter. Autumn, Winter, Spring. Five three-hour periods each week. Prerequisite, Fine Arts 431. Mr. Grimes.

Painting from still life with the object of developing the color sense and acquiring directness of presentation. Problems in the organization and execution of pictures.

544. Advanced Water Color Painting. Five credit hours. One Quarter. Autumn and Spring. Five three-hour periods each week. Prerequisite, Fine Arts 441. Miss Bradley.

A continuation of Fine Arts 441 with advanced problems in picture making.

Not open to students who have credit for Fine Arts 444.

560. Advanced Oil Painting. Five credit hours. One Quarter. Autumn, Winter, Spring. Five three-hour periods each week. Prerequisite, Fine Arts 442. Mr. Grimes.

Painting in oil from still life and the costume model. Advanced problems in picture making.

Not open to students who have credit for Fine Arts 443.

645-646-647. Portrait Painting. Five credit hours. Autumn, Winter, and Spring Quarters. Five three-hour periods each week. Prerequisite, Fine Arts 505 and 560. Mr. Hopkins.

Painting from life. The organization and development of pictures with special reference to the delineation of character.

Not open to students who have credit for Fine Arts 545-546-547.

SCULPTURE

461. Sculpture. Five credit hours. One Quarter. Autumn, Winter, Spring. Five three-hour laboratory periods each week, with weekly problems. Prerequisite, Fine Arts 421. Mr. Frey.

This course includes the principles of cast making with practice.

562. Advanced Sculpture. Five credit hours. One Quarter. Autumn, Winter, Spring. Five three-hour laboratory periods each week with weekly problems. Prerequisite, Fine Arts 461. Mr. Frey.

Not open to students who have credit for Fine Arts 462.

TECHNICAL PROBLEMS

NOTE: For further specialization in any technical field, students may enroll in the following courses:

565-566-567. Technical Problems. Three to fifteen credit hours. Autumn, Winter, and Spring Quarters. Mr. Hopkins, Mr. Payant, Mr. Fanning, Mr. Lynch, Mr. Grimes, Mr. Rannells, Miss Robinson, Mr. Frey, Mr. Sherman.

This course is open, by permission of the department, to students who show particular ability in design, drawing, painting or sculpture, and who, having completed the other technical courses offered in the department, wish to pursue advanced problems in these fields under the supervision of the department. Students majoring in Landscape Architecture take special problems in planting design under these courses.

Not open to students who have credit for Fine Arts 465-466-467.

661-662-663. Advanced Technical Problems. Three to fifteen credit hours. Autumn, Winter, and Spring Quarters. Mr. Hopkins, Mr. Fanning, Mr. Payant, Mr. Frey, Mr. Lynch, Mr. Grimes, Mr. Rannells, Miss Robinson.

This course is open, by permission of the department, to students who have shown particular ability in design, drawing, painting, or sculpture and who wish to pursue advanced problems in these fields under the supervision of the department. Students in Landscape Architecture pursue special work in design and construction under these courses.

HISTORY AND APPRECIATION

451-452-453. History of the Fine Arts Through the Ages. Five credit hours. Autumn, Winter, and Spring Quarters. Not open to Freshmen. Mr. Fanning.

The history of architecture, sculpture, painting, and the minor arts which best reflect civilization from the time of the earliest artistic expression in Egypt and Mesopotamia to the present-day developments in Europe and America. A survey with consideration of physical and spiritual factors determining the production of beauty. Illustrated lectures, quizzes, and reports.

479. Appreciation of the Fine Arts. Three credit hours. One Quarter. Autumn, Winter, Spring. Mr. Fanning and others.

A course of study planned to give the layman an intelligent appreciation of the visual arts by designating ways of approach, the basis of analysis and criticism of the plastic, pictorial, and related arts. Illustrated lectures, technical demonstrations, quizzes and reports.

Not open to students who have credit for Fine Arts 476-477-478.

500. Appreciation of Landscape Design. Two credit hours. Spring Quarter. Two lectures each week. Open to any student not majoring in Landscape Architecture. No prerequisite. Mr. Lynch.

An historical presentation of the principles and practices of Landscape Architecture. Illustrated lectures, class discussions, reports, and collateral reading.

654. History of Renaissance Art. Five credit hours. Spring Quarter. Five lectures each week. Prerequisite, Fine Arts 453. Mr. Fanning.

The study of the Renaissance movement in Italy as reflected in architecture, painting, and sculpture; its influence upon other countries and its relationship to the intellectual trend from the fifteenth to the nineteenth century.

***656. History of Oriental Art.** Five credit hours. Winter Quarter. Five lectures each week. Mr. Fanning.

The study of Asiatic culture expressed by the historical development of architecture, sculpture and painting in Persia, India, China, and Japan. Illustrated lectures, reading and reports.

* Not given in 1935-1936.

670. History of the Art of Ancient Egypt and Mesopotamia. Two credit hours. Autumn Quarter. Prerequisite, Fine Arts 451, 452, 453, or consent of the department. Mr. Fanning.

The specialized study of the ancient arts of the valleys of the Nile and Tigris-Euphrates and their influence upon eastern Mediterranean culture. Lectures, discussions and presentation by each student of some special problem of research.

671. History of Hellenic Art. Three credit hours. Autumn Quarter. Prerequisite, Fine Arts 451, 452, 453, or consent of the department. Mr. Fanning.

The specialized study of Greek architecture, sculpture, and painting. Lectures, round table discussions and presentation by each student of some special problem of research.

***672. History of Moslem Art.** Two credit hours. Winter Quarter. Prerequisite, Fine Arts 451, 452, 453, or permission of the department. Alternating with Fine Arts 674. Mr. Fanning.

The study of Moslem architecture and minor arts with special attention to origins and influences. Lectures, readings, and reports.

673. History of Christian Art of the Middle Ages. Three credit hours. Winter Quarter. Prerequisite, Fine Arts 451, 452, 453, or permission of the department. Mr. Fanning.

The specialized study of various phases of Romanesque and Gothic art as an expression of medieval Christianity in Italy, France, Germany, Spain, and England. Lectures, reading, discussions and reports on research topics.

674. History of Spanish Art. Two credit hours. Winter Quarter. Prerequisite, Fine Arts 451, 452, 453, or recommendation of the Department of Romance Languages. Alternating with Fine Arts 672. Mr. Fanning.

The study of the architecture, sculpture, painting and minor arts of Spain and the countries under Spanish influence. Lectures and reports.

676. History of English and American Art. Three credit hours. Winter Quarter. Prerequisite, Fine Arts 451, 452, 453, or permission of the department. Alternating with Fine Arts 678. Miss Robinson.

A study of the work of the outstanding architects, painters, and sculptors in America as an index of the artistic trend of the eighteenth, nineteenth, and twentieth centuries. Illustrated lectures, reading, and reports.

677. History of French Art from the Beginning of the Seventeenth Century to the Present Day. Three credit hours. Spring Quarter. Prerequisite, Fine Arts 451, 452, 453, or recommendation of the Department of Romance Languages. Alternating with Fine Arts 679. Miss Robinson.

A specialized study of the architecture, sculpture, and painting of modern France. Illustrated lectures, reading, and reports.

***678. History of Art in the Low Countries.** Two credit hours. Spring Quarter. Prerequisite, Fine Arts 451, 452, 453, or permission of the department. Reading knowledge of German or Dutch desirable. Alternating with Fine Arts 676. Mr. Fanning.

Concentration upon the paintings of the Flemish and Dutch painters of the sixteenth and seventeenth centuries. Lectures and reports.

***679. History of German Art.** Three credit hours. Spring Quarter. Prerequisite, Fine Arts 451, 452, 453, or recommendation of the Department of German. Reading knowledge of German required. Alternating with Fine Arts 677. Mr. Fanning.

A specialized study of the architecture, sculpture, and paintings of the Germanic people and their relationship to social and political development. Lectures, reading, and reports.

FOR GRADUATES

An undergraduate student shall not be permitted to take any course in the "800" group except by permission of the Graduate Council.

For description of graduate courses in this department see the Bulletin of the Graduate School.

* Not given in 1935-1936.

FRENCH

(See Romance Languages and Literatures)

GEOGRAPHY

Office, 213 Commerce Building

PROFESSORS HUNTINGTON, VAN CLEEF, PEATTIE, AND CARLSON, ASSOCIATE PROFESSOR SMITH, MR. GARLAND, MR. WRIGHT

Students who wish to carry additional courses in this Department are reminded that the College of Arts and Sciences permits thirty hours of work to be carried in courses offered in the Bulletins of other Colleges. See Bulletin of the College of Commerce for further courses in this Department.

401. Principles of Geography. Five credit hours. One Quarter. Autumn, Winter, Spring. Five class meetings each week. Mr. Carlson, Mr. Huntington, Mr. Garland, Mr. Wright.

The elements of the natural environment in relation to human activities. Geographic factors in society. The relation of geography to the physical and social sciences.

Not open to students who have credit for Geography 402.

403. Regional-Economic Geography. Five credit hours. One Quarter. Autumn, Winter, Spring. Five class meetings each week. Prerequisite, Geography 401. Mr. Van Cleef, Mr. Smith, Mr. Peattie.

The geography of the world's commodities; their regional aspects; a survey of the economic activities of the world's political entities in the light of their geographic conditions.

405. Geography of the United States and Canada. Five credit hours. One Quarter. Autumn, Winter, Spring. Five class meetings each week. Prerequisite, Geography 401. Mr. Huntington, Mr. Smith, Mr. Wright.

A geographic analysis of the United States and Canada; the correlation of their natural resources and other environmental factors with their economic and social structure and development.

Not open to students who have credit for Geography 442.

421. Cartography and Map Interpretation. Three credit hours. Spring Quarter. Three class meetings each week. Given in alternate years. Prerequisite, Geography 401 or sophomore standing. Mr. Smith.

The interpretation and appreciation of maps. A consideration of scales, symbols, and the common map projections. The representation of geographic data by the use of dots, isopleths, cartograms, and other graphic devices. A survey of the various maps published by the United States and other map-issuing institutions.

FOR ADVANCED UNDERGRADUATES AND GRADUATES

According to the University regulations, courses in this group are not open to Freshmen or Sophomores.

604. Conservation and Land Utilization. Three credit hours. Autumn Quarter. Three class meetings each week. Prerequisite, Geography 401 and 403 or 405 and ten additional hours of allied subjects. Mr. Huntington.

The importance of our natural resources. The need for their conservation. Land as a natural resource and economic factor. Character and location as factors in land utilization and value. Regional and national planning for resource utilization.

Not open to students who have credit for Geography 606.

605. Geography of Ohio. Two credit hours. Winter Quarter. Two class meetings each week. Prerequisite, Geography 401 and 403 or 405 and ten additional hours of allied subjects. Mr. Huntington.

Geographic influences in the history of the state. Ohio's agriculture, industries, and social conditions, together with the underlying physical, climatic, and other environmental factors that have contributed to the present development of the region.

615. Climatology. Three credit hours. Autumn Quarter. Three class meetings each week. Prerequisite, twenty hours in natural or social scence, including Geography 401 or Geology 420 or Botany 402. Mr. Smith.

Elements of climate and their distribution. The controls of climate. Types of climate and their distribution, concluded by a consideration of the recent thought on the subject of climatic regions.

Not open to students who have credit for Geography 411.

621. Geography of Europe. Three credit hours. Autumn Quarter. Three class meetings each week. Prerequisite, Geography 401 and 403. Mr. Van Cleef.

The geographic factor in the economic, social, and political progress of the nations. Current major problems of the continent in the light of their geographic background.

624. Geography of Latin America. Three credit hours. Winter Quarter. Three class meetings each week. Prerequisite, Geography 401 and 403. Mr. Carlson.

Geographic regions of Mexico, Central America, the West Indies, and South America. The development of the political divisions in relation to their geographic conditions. Special emphasis is placed on the geographic analysis of inter-American affairs.

Not open to students who have credit for Geography 623.

625. Geography of Asia. Three credit hours. Spring Quarter. Three class meetings each week. Prerequisite, Geography 401 and 403. Mr. Garland.

The major geographic regions of the continent and its insular fringe, with emphasis upon the regions of densest population. Consideration is given to inter-regional relationships.

631. The Historical Geography of Commerce. Three credit hours. One Quarter. Autumn and Spring. Three class meetings each week. Prerequisite, Geography 401 and 403 or 405, or History 401 and 402, or History 408 and 409. Mr. Peattie.

Geographic factors in commerce to 1800. Resources and production in the ancient and mediaeval world. Trade routes in relation to exchange of ideas. Geographic elements in the early origin of many present-day commercial practices.

633. The Geography of Modern Commerce. Three credit hours. One Quarter. Autumn and Spring. Three class meetings each week. Prerequisite, Geography 401 and 403 or 405. Mr. Carlson.

Geographic factors affecting the establishment and development of modern trade routes over air, land, and water. Unequal distribution of natural resources and differences in industrial and social development as basic factors in inter-regional and international trade. Geography in market analysis.

Not open to students who have credit for Geography 632.

799. Special Problems in Geography. Two or three credit hours. One Quarter. Autumn, Winter, Spring. Assigned readings, conferences, and reports. Prerequisite, eighteen hours of geography, senior standing, and consent of the instructor.

(a) Problems in Physical Geography. Mr. Peattie, Mr. Carlson, Mr. Smith.

(b) Problems in Climatology. Mr. Smith, Mr. Peattie.

(c) Problems in Political and Historical Geography. Mr. Huntington, Mr. Peattie, Mr. Van Cleef.

(d) Problems in Economic and Commercial Geography. Mr. Huntington, Mr. Van Cleef, Mr. Carlson.

Not open to students who have credit for Geography 642.

FOR GRADUATES

An undergraduate student shall not be permitted to take any course in the "800" group except by permission of the Graduate Council.

For description of graduate courses in this department see the Bulletin of the Graduate School.

GEOLOGY†
Office, 103, 104 Orton Hall

PROFESSORS CARMAN AND SPIEKER, ASSOCIATE PROFESSOR STOCKDALE, ASSISTANT PROFESSOR STEWART, MR. STOUT, MR. BERRY, MR. COLE, MR. FREEMAN

Seniors who desire to elect geology should take 601, 602, and 603 instead of 401 and 402.

Students who consider majoring in geology should consult the department as early as possible, in order to plan a sequence of courses which will give the student the essential training in the related sciences.

401. General Geology. Five credit hours. One Quarter. Autumn, Winter, Spring. Four recitations and one one-hour laboratory period each week. One half-day field trip at an optional time is required except in the Winter Quarter. All instructors.

A study of the surface features of the earth and their origin; of the structural features of the earth's crust and how they were formed; and of the materials of the earth's crust. In the laboratory, topographic maps and the common minerals and rocks are studied.

402. General Geology. Five credit hours. One Quarter. Autumn, Winter, Spring. Four recitations and one one-hour laboratory period each week. One half-day field trip, at an optional time is required, except in the Winter Quarter, unless credit for field trips was received in Geology 401. Prerequisite, Geology 401. All instructors.

An elementary study of the geologic history of the earth. In the laboratory the common types of fossils and geological maps are studied.

411. The Geology of our Mineral Wealth. Five credit hours. Winter Quarter. Four recitations or lectures and one one-hour laboratory period each week. Prerequisite, Geology 401. Mr. Freeman.

An elementary study of the world distribution, geologic occurrence, and uses of the important mineral deposits, with special reference to control of mineral production by countries.

412. Geologic Life Development. Five credit hours. Spring Quarter. Lectures, assigned readings, recitations. Prerequisite, Geology 401-402. Mr. Spieker.

The development of life on the earth as demonstrated by the history of selected groups of animals, particularly of the higher vertebrates. Attention is centered on the interpretation of the geologic evidence for the evolution of the groups discussed.

***420. Meteorology.** Five credit hours. Spring Quarter. Four recitations and one one-hour laboratory period each week. Given in alternate years. No prerequisite. Mr. Stockdale.

A study of the elements of weather and weather forecasting. Special attention is given to the weather of Columbus.

FOR ADVANCED UNDERGRADUATES AND GRADUATES

According to the University regulations, courses in this group are not open to Freshmen or Sophomores.

601. Advanced General Geology: Physiography. Five credit hours. Autumn Quarter. Four recitations and one two-hour laboratory period each week. Saturday mornings must be kept open for field trips. Prerequisite, Geology 401-402, or Geography 401-403, or Senior rank. Mr. Cole.

A detailed study of the processes at work on the land surface, and the topographic forms produced by them. This course includes practice in the interpretation of topographic maps.

Not open to students who have credit for Geology 501.

602. Advanced General Geology: Structural and Dynamic. Five credit hours. Winter Quarter. Four recitations and one two-hour laboratory period

† For courses in Mineralogy and Petrography, see Department of Mineralogy. For courses in Geography, see Department of Geography. For courses in Petroleum Engineering, see Department of Mine Engineering.

* Not given in 1935-1936.

each week. Prerequisite, Geology 401-402, or Senior rank and Geology 601. Mr. Spieker.

A detailed study of the structural features of the earth's crust and of the forces which have produced these structures. This course includes practice in the interpretation of geological maps.

Not open to students who have credit for Geology 502.

603. Advanced General Geology: Historical. Five credit hours. Spring Quarter. Four recitations and one two-hour laboratory period each week. Saturday mornings must be kept open for field trips. Prerequisite, Geology 401-402 and 602 or 502, or Senior rank and Geology 602. Mr. Carman, Miss Stewart.

A study of the geological history of North America, its physical history, and life development. The course deals with the classification and distribution of the geological formations, especially those of Ohio, and with the characteristic fossils of each system.

Not open to students who have credit for Geology 503.

605. Economic Geology: Metals. Five credit hours. Autumn Quarter. Five recitations or lectures each week. Prerequisite, four Quarters of geology or of geology and mineralogy, and Mineralogy 401-402. Mr. Freeman.

A study of the nature of ores, their classification and origin; the metallic deposits.

606. Economic Geology: Non-metals. Three credit hours. Winter Quarter. Three recitations or lectures each week. Prerequisite, four Quarters of geology or of geology and mineralogy, and Mineralogy 401-402. Mr. Freeman.

A study of the non-metallic deposits including coal, with special emphasis on the coals of Ohio.

607. Economic Geology: Petroleum. Three credit hours. Spring Quarter. Three recitations or lectures each week. Prerequisite, four Quarters of geology or of geology and mineralogy. Mr. Freeman.

A study of petroleum, natural gas, and the solid bitumens; their origin, geological relations, and distribution.

608. Stratigraphic Geology of Ohio. Five credit hours. Autumn Quarter. Given in alternate years. Prerequisite, four Quarters of geology, or geology and mineralogy, and consent of the instructor. Mr. Carman.

Field trips with reports, lectures, and assigned readings. Field trips on Saturdays (entire day) while the weather permits.

The geological formations of Ohio are studied in the field, by rock specimens, and by assigned readings. This course is intended to acquaint the student with the rock formations of Ohio.

609. Petrology. Five credit hours. Winter Quarter. Four recitations and one two-hour laboratory period each week. Given in alternate years. Prerequisite, four Quarters of geology or of geology and mineralogy, and Mineralogy 401-402. Mr. Freeman.

A study of the origin, mode of formation, and geologic relations of rocks, with laboratory study in rock identification.

***610. Physiography of the United States.** Three credit hours. Winter Quarter. Two recitations and two one-hour laboratory periods each week. Given in alternate years. Prerequisite, four Quarters of geology or of geology and geography, including Geology 601. Mr. Cole.

A study of the physiographic regions of the United States. The topographic form and physiographic history with the geologic history as a background. Designed to give the student of geology and geography a working knowledge of the physiography of the United States.

612. Special Problems. Three to five credit hours. Autumn, Winter, and Spring Quarters. Assigned readings, conferences, and reports. Prerequisite, four Quarters in geology and consent of the chairman of the department.

A study of special topics by conferences and reports. Laboratory, library, or field work. Properly qualified students may carry on work in stratigraphy, sedimentation, structural geology, economic geology, petrology, opaque ore mineral studies, paleontology and physiography under the direction of the appropriate members of the department.

* Not given in 1935-1936.

*615. Geological Surveying. Five credit hours. Spring Quarter. Two recitations and three field or laboratory periods each week. Given in alternate years. Prerequisite, four Quarters in geology. Students intending to elect this course should consult the instructor. Class enrollment limited to eight. Mr. Stockdale.

A study of the construction and interpretation of topographic and geologic maps, with special emphasis on instrument and map work in connection with oil surveying. Field practice in various methods of triangulation, traversing, and topographic sketching. Instruments used include plane table, telescopic alidade, open sight alidade, aneroid barometer, hand level, stadia, and compass.

616. Clays. Five credit hours. Winter Quarter. Recitations, lectures, and assigned readings. Prerequisite, four Quarters of geology and general chemistry, or Senior rank in Ceramic Engineering. Mr. Stout.

The properties, distribution, uses, and origin of clays. Emphasis will be given to the clays of Ohio.

620. Introductory Paleontology. Three credit hours. Autumn Quarter. Two recitations and one two-hour laboratory period each week. Prerequisite, four Quarters of geology or of geology and zoology. Mr. Carman, Miss Stewart.

A study of the systematic classification of the animal kingdom as a means of becoming acquainted with the faunas that characterize the various geological formations. The course deals mainly with the generic characters of the fossil invertebrates and their use in identifying and correlating geological formations.

621. Introductory Paleontology. Three credit hours. Winter Quarter. Mr. Carman, Miss Stewart.

A continuation of Geology 620.

622. Introductory Paleontology. Three credit hours. Spring Quarter. Mr. Carman, Miss Stewart.

A continuation of Geology 621, but deals largely with the fossil vertebrates.

*623. Micro-Paleontology. Three credit hours. Spring Quarter. Laboratory work. Given in alternate years. Prerequisite, Geology 620-621-622. Mr. Berry.

A study of fossil micro-organisms, especially the foraminifera.

627. Field Geology. Eight credit hours. Summer Quarter. First term. Prerequisite, Geology 601-602-603 or equivalent, and permission of the instructor. Limited to men. Mr. Stockdale.

This course offers training in the standard methods of geologic field work. It is conducted from a fixed field camp at Cumberland Spring, near Dayton, Tennessee, and employs the entire time of the students. The field for study is the Appalachian region of eastern Tennessee, which offers considerable variety of physiographic, stratigraphic, structural, and economic geology. The course begins about June 15 and continues five weeks, after which a report will be prepared by each student, and submitted by the following December first.

FOR GRADUATES

An undergraduate student shall not be permitted to take any course in the "800" group except by permission of the Graduate Council.

For description of graduate courses in this department see the Bulletin of the Graduate School.

GERMAN
Office, 210 Derby Hall

PROFESSORS M. B. EVANS, EISENLOHR (EMERITUS), AND MAHR, LECTURER SPERBER, ASSISTANT PROFESSORS THOMAS (EMERITUS) AND GAUSEWITZ, MR. NORDSIECK, MR. KRAMER, MR. EPP, MR. WIENS, AND ASSISTANTS

Elective courses in allied departments are recommended to students majoring in German:

Fine Arts 679	History 629
Greek 701	Philosophy 601, 602, 603

401. Elementary German. Five credit hours. One Quarter. Autumn, Winter, Spring. Five recitations each week. All instructors.

The elements of German grammar; reading of easy prose, oral practice.

* Not given in 1935-1936.

402. Elementary German. Five credit hours. One Quarter. Autumn, Winter, Spring. Five recitations each week. Prerequisite, German 401 or equivalent. All instructors.

The elements of German grammar; reading of easy prose, oral practice.

403. Intermediate German. Five credit hours. One Quarter. Autumn, Winter, Spring. Five recitations each week. Prerequisite, German 402 or equivalent. All instructors.

Reading of narrative prose; oral and written practice.

404. Easy Classical Reading. Five credit hours. One Quarter. Autumn, Winter, Spring. Five recitations each week. Prerequisite, German 403 or equivalent. All instructors.

Reading of (a) descriptive and critical prose; (b) a classical drama supplemented by discussions and lectures; (c) selected lyrics.

506. Science Reading. Three credit hours. One Quarter. Autumn, Winter, Spring. Two recitations each week. Special reading in lieu of the third meeting. Prerequisite, German 404 or equivalent, and concurrent or previous registration in Advanced German. All instructors.

The class will be divided into sections, each dealing with a single or closely related sciences. Rapid reading of elementary German scientific text followed by more difficult technical literature. Practice in word formation and sentence structure. Outside readings and reports.

Not open to students who have credit for German 406.

507. Elementary Composition. Two credit hours. One Quarter. Autumn, Winter, Spring. Two recitations each week. Prerequisite, German 403 or equivalent. This course is open only to students in German 404 or in any of the more advanced reading courses of the "500" group. It should be normally taken with the first course elected in "Advanced German" (German 510 to 550). It is required of students taking German as a major subject. Mr. Kramer, Mr. Evans.

A systematic review of German grammar with special emphasis upon the more unusual grammatical forms and constructions; practice in writing and speaking German.

Not open to students who have credit for German 407.

508. Elementary Composition (Continued). Two credit hours. Winter Quarter. Two recitations each week. Prerequisite, German 507 or registration in a "600" course. This course may be taken in conjunction with any of the groups of "Advanced German" (German 510 to 550). It is required of students taking German as a major subject. Mr. Gausewitz.

A study of German syntax with practice in writing and speaking German.

Not open to students who have credit for German 408.

Advanced German. Three credit hours a Quarter. Autumn, Winter, Spring. Three recitations each week. Prerequisite, German 404 or 506 or equivalent. To secure five credit hours, the student should also elect German 507 which may be followed by 508. No student may take more than three courses in this group. All instructors.

Readings from eighteenth and nineteenth century authors. One course in this group is offered each Quarter, the reading selections varying from year to year.

553. Autumn Quarter, 1935. Readings in German Nineteenth Century Narrative Prose. Keller: Die drei gerechten Kammacher; Mayer: Das Amulet; Fontane: Unterm Birnbaum. Mr. Gausewitz, Mr. Epp.

510. Winter Quarter, 1936. Readings in German Classical Drama. Goethe: Götz von Berlichingen; Lessing: Nathan der Weise; Schiller: Don Carlos. Mr. Nordsieck, Mr. Epp.

520. Spring Quarter, 1936. Readings in German Nineteenth Century Drama. Kleist: Prinz von Homburg; Hebbel: Agnes Bernauer; Kleist: Kätchen von Heilbronn. Mr. Nordsieck, Mr. Epp.

FOR ADVANCED UNDERGRADUATES AND GRADUATES

According to the University regulations, courses in this group are not open to Freshmen or Sophomores.

Proseminary: Eighteenth and Nineteenth Century Literature. Three credit hours. Autumn, Winter, and Spring Quarters. Three hours lecture and quiz each week. Prerequisite, six Quarters of German or equivalent.

641. Autumn Quarter, 1935. Life and Works of Gerhart Hauptmann. Mr. Mahr.

605. Winter Quarter, 1936. German Lyrics and Lyric Poets. Mr. Gausewitz.

612. Spring Quarter, 1936. Goethe's Faust. Mr. Evans.

655. German Phonetics. Three credit hours. Spring Quarter. Three hours lecture and drill each week. Prerequisite, six Quarters of German or equivalent. Mr. Nordsieck.

A study of the standard of German pronunciation and its chief variations. Practice in reading and writing phonetic texts.

†673. Middle High German. Three credit hours. Winter Quarter. Prerequisite, six Quarters of German or equivalent.

Introduction to the morphology and syntax of Middle High German. Reading of selections from the Nibelungenlied and Walther von der Vogelweide.

***675. The German Language.** Three credit hours. Spring Quarter. Three hours lecture and quiz each week. Prerequisite, six Quarters of German or equivalent.

The study of texts illustrating the history of the German language.

685. Advanced Composition. Three credit hours. Spring Quarter. Three hours lecture and quiz each week. Prerequisite, German 507 and 508 or equivalent and permission of the instructor in charge. Mr. Mahr.

An advanced course in speaking and writing German, accompanied by a review of German syntax.

695. Special Problems. Two to ten credit hours. Autumn, Winter, and Spring Quarters. Open only on permission of the department. Mr. Gausewitz, Mr. Evans.

Investigations of minor problems in the various fields of German literature and philology.

FOR GRADUATES

An undergraduate student shall not be permitted to take any course in the "800" group except by permission of the Graduate Council.

For description of graduate courses in this department see the Bulletin of the Graduate School.

GREEK LANGUAGE AND LITERATURE

(See Classical Languages and Literature)

HISTORY

Office, 207 University Hall

PROFESSORS WITTKE, SIEBERT (RESEARCH), McNEAL, HOCKETT, WASHBURNE, DORN, HILL, AND ROBINSON, ASSOCIATE PROFESSOR McDONALD, ASSISTANT PROFESSORS ROSEBOOM, WEISENBURGER, AND SIMMS, MR. DUPRE, MR. HARE, MR. LANDIN, MR. HOTCHKISS, MR. ROBERTS, AND ASSISTANTS

401. Modern European History to 1815. Five credit hours. One Quarter. Autumn, Winter, Spring. Five class meetings each week. All instructors.

A general account of the history of western Europe from 1500 through the Napoleonic era, with a preliminary survey of the late Middle Age. This course, with 402, is the introductory

† Not given during the academic year, 1935-1936.
* Not given in 1935-1936.

work in history, and should be taken before History 403 and 404 by all who expect to major in the department. Textbook, collateral readings, and discussions.

402. Modern Europe since 1815. Five credit hours. One Quarter. Autumn, Winter, Spring. Five class meetings each week. Prerequisite, History 401. All instructors.

A continuation of History 401.

403. History of the United States (1763-1850). Five credit hours. One Quarter. Autumn, Winter, Spring. Five class meetings each week. This course carries full credit for Seniors. All instructors.

A study of the general political, constitutional, and economic development of the United States from the beginning of the Revolutionary era to the end of the Jacksonian epoch. Textbook, collateral readings, and discussions.

404. History of the United States (1850-1925). Five credit hours. One Quarter. Autumn, Winter, Spring. Five class meetings each week. This course carries full credit for Seniors. Prerequisite, History 403. All instructors.

A continuation of History 403.

407. Medieval Europe (400 to 1500). Five credit hours. Autumn Quarter. Five class meetings each week. Open to Freshmen. Mr. McNeal.

A general course in the history of Europe, from the collapse of the Roman Empire in the West to the Age of Discoveries. Textbook, collateral readings, and class discussion.

408. The History of Western Civilization. Five credit hours. Autumn Quarter. Five class meetings each week. Mr. Noyes, Mr. Dupre.

A survey of pre-historic European cultures; the states and civilizations of the ancient world; in the Near East, Egypt, Greece, and Rome; the Teutonic influx; survey of medieval thought and institutions; the appearance of towns, the rise of the bourgeoisie, and the development of urban culture.

Lectures, readings, discussions, and reports.

Not open to students who have credit for History 401-402.

409. The History of Western Civilization. Five credit hours. Winter Quarter. Five class meetings each week. Mr. Noyes, Mr. Dupre.

The Protestant Revolt and associated political, intellectual, and social conflict and change; discoveries, colonial expansion, dynastic and colonial rivalries; the development of feudal kingdoms into national, absolute monarchies; the rise of parliamentary governments in England; the Enlightenment; and the preparation for revolution.

Lectures, readings, discussions, and reports.

Not open to students who have credit for History 401-402.

410. The History of Western Civilization. Five credit hours. Spring Quarter. Five class meetings each week. Mr. Dupre.

The American Revolution in its European connections; the Revolutionary movements in Europe, 1789-1934; modern industrialism; liberal and radical social and political programs; modern nationalism; intellectual and scientific development; the "international anarchy"—chauvinism, imperialism, and conflict; the "Peace" and international organization; Fascism and the status of the Democratic system.

Lectures, readings, discussions, and reports.

Not open to students who have credit for History 401-402.

421. England to 1603. Five credit hours. Autumn Quarter. Five class meetings each week. Not open to Freshmen. Mr. Robinson.

A general survey of English history during the Middle Age. Lectures, readings, and discussions.

422. England since 1603. Five credit hours. Spring Quarter. Five class meetings each week. Not open to Freshmen. Mr. Robinson.

A continuation of History 421, but may be taken independently. Lectures, readings, and discussions.

437. The History of Ohio. Three credit hours. Winter Quarter. Three class meetings each week. Prerequisite, History 403-404. Mr. Weisenburger.

A general survey of the history of Ohio, from the Indian period to the present time. Lectures, readings, and discussions.

FOR ADVANCED UNDERGRADUATES AND GRADUATES

For *all* courses in this group, the prerequisite is at least Junior standing and four Quarters in the social science field, of which at least two must be in history. Specific prerequisites are indicated in connection with specific courses. These courses are not open to Freshmen or Sophomores.

607. The Renaissance. Three credit hours. Autumn Quarter. Three class meetings each week. Prerequisite, History 401-402; advanced students from other departments without this prerequisite must obtain the consent of the instructor. Mr. Dorn.

The Renaissance primarily as an Italian movement. The political evolution of the Italian communes into city republics, with special emphasis on Florence, Milan, Venice, Genoa, and Rome; early capitalism and industrial and commercial movements; an analysis of the culture, art, science and literature of the Renaissance and their influence upon the Church, the Papacy, and modern modes of thought and behavior. Lectures, readings, reports, and discussions.

608. The Reformation. Three credit hours. Winter Quarter. Three class meetings each week. Prerequisite, History 401-402; advanced students from other departments without this prerequisite must obtain the consent of the instructor. Mr. Dorn.

The Church and European society in the later Middle Ages; culture and thought in the age of the Reformation; the rise of the European state system; Luther and the German national movement; Zwingli and Switzerland; Calvin; the expansion of Protestantism in Europe; and the relation of the Reformation to medieval and modern civilization. Lectures, readings, reports, and discussions.

611. Constitutional History of England to 1485. Three credit hours. Autumn Quarter. Three class meetings each week. Prerequisite, History 421 or a major in History. Open without these prerequisites to Juniors and Seniors preparing for law. Mr. Robinson.

The origin and development of English legal institutions and government. Textbook, lectures, collateral readings, and discussions.

612. Constitutional History of England since 1485. Three credit hours. Spring Quarter. Three class meetings each week. Prerequisite, History 422, and same as for History 611. Mr. Robinson.

A continuation of History 611. Special emphasis will be given to the evolution of parliamentary government, constitutional liberties, the cabinet and party system, Catholic emancipation, electoral reform, the Irish question, and the rise of democracy. Textbook, lectures, collateral readings, and discussions.

†613. England in the Tudor Period. Three credit hours. Winter Quarter. Three class meetings each week. Prerequisite, History 421, or a major in History. Advanced students from other departments without this prerequisite must obtain the consent of the instructor. Mr. Robinson.

An intensive study of England in the period of transition, emphasizing social and political conditions, together with a brief survey of contemporary Europe. Some attention will be given to the source material of the period. Lectures, readings, reports, and discussions.

***614. England in the Stuart Period.** Three credit hours. Three class meetings each week. Prerequisite, History 421, and same as for History 613. Mr. Robinson.

An intensive study of England in the seventeenth century emphasizing social and political conditions and England's relations with Europe and North America. Some attention will be given to the source material of the period. Lectures, readings, reports, and discussions.

617. The Absolute Monarchy (1650-1789). Three credit hours. Spring Quarter. Three class meetings each week. Mr. Dorn.

This course offers a study of the transformation of feudal society into the modern absolute state in its social, economic and constitutional aspects, as exemplified in France, Spain, Austria, Prussia, and Russia. Special emphasis will be placed on France under Louis XIV, on the evolution of Prussia and Russia, the changing diplomatic alignments of the principal European Powers from 1660 to 1789, on the intellectual enlightenment of the eighteenth century and Enlightened Despotism. Readings, discussions, and reports.

619. Medieval Civilization. Three credit hours. Winter Quarter. Three class meetings each week. Prerequisite, History 407, or a major in History.

† Not given during the academic year, 1935-1936.
* Not given in 1935-1936.

Advanced students from other departments without this prerequisite must obtain the consent of the instructor. Mr. McNeal.

The formation of feudal society; culture of castle and court; the rise of towns and their social and economic life; the evolution of the Medieval Church and its educational and artistic contributions. Lectures, readings, problems, and class discussion.

†621. Expansion of Europe to 1588. Three credit hours. Autumn Quarter. Three class meetings each week. Prerequisite, History 401-402, or a major in History. Advanced students from other departments without this prerequisite must obtain the consent of the instructor. Mr. Washburne.

A study of the early geographical ideas of the Europeans, their first contacts with the outside world, the period of discovery, the creation of the Portuguese empire in the east and the Spanish monopoly in the west, to the collapse of the Iberian control of European expansion by the destruction of the Armada in 1588. Lectures, readings, and discussions.

622. Expansion of Europe from 1588 to 1815. Three credit hours. Autumn Quarter. Three class meetings each week. Prerequisite, same as for History 621. Mr. Washburne.

A study of the rise of the chartered trade companies, the ascendency of the Dutch, the contest between the Dutch and the English for commercial supremacy and the long struggle between the English and the French for maritime supremacy, with its resultant effects upon India and North America through the settlement at the end of the Napoleonic era. Lectures, readings, and discussions.

623. Expansion of Europe from 1815 to the Present. Three credit hours. Winter Quarter. Three class meetings each week. Prerequisite, same as for History 621. Mr. Washburne.

A study of the problems of expansion in the nineteenth and twentieth centuries: the development of India, the movement into the Southern Pacific, the partition of Africa and the various phases of modern imperialism after 1876 through the readjustment of territory under the mandate system after the World War. Lectures, readings, and discussions.

624. The French Revolution and Napoleon. Three credit hours. Autumn Quarter. Three class meetings each week. Prerequisite, History 401-402 or a major in History. Advanced students from other departments without this prerequisite must obtain consent of the instructor. Mr. McNeal.

625. The Third French Republic. Three credit hours. Spring Quarter. Three class meetings each week. Prerequisite, same as for History 624. Mr. McNeal.

628. The Reconstruction of Europe (1919-1932). Three credit hours. Winter Quarter. Three class meetings each week. Mr. Washburne.

The first phase of reconstruction after the war, from the decisions of the Paris Conference of 1919 to the entrance of Germany into the League of Nations in 1926; the various national and international problems involved in the attempted settlement of world conditions. Lectures, readings, and discussions.

629. Modern Germany (1789-1918). Three credit hours. Spring Quarter. Three class meetings each week. Prerequisite, History 401-402; advanced students from other departments without this prerequisite must obtain the consent of the instructor. Mr. Dorn.

Introductory lectures on the basic problems and tendencies of German history; Germany and the French Revolution; German Enlightenment and Romanticism and their relation to political thought; the Stein-Hardenberg reforms and the war of liberation; Prussia, Austria and the problem of German unity; the nationalist and democratic movements; the Bismarckian Empire; industrial development; William II and the World War; the German Revolution of 1918. Lectures, readings, reports, and discussions.

630. The Diplomacy of Europe (1878-1919). Three credit hours. Autumn Quarter. Three class meetings each week. Prerequisite, History 401-402, or a major in History. Advanced students from other departments without this prerequisite must obtain consent of instructor. Mr. Washburne.

A study, with the use of the new material now available, of the diplomatic obligations of the European states from the Congress of Berlin of 1878 to the Paris Conference of 1919; the formation of alliances, the crises which culminated in the war, and the attitude of European leaders. Lectures, readings and discussions.

† Not given during the academic year, 1935-1936.

631. Constitutional History of the United States to 1837. Three credit hours. Autumn Quarter. Three class meetings each week. Prerequisite, History 403-404. Mr. Hockett.

The purpose of this course, together with History 632, is to exhibit the growth of our constitutional system in its genetic aspects, as the product of vital social forces. Lectures, discussions, and reports.

632. Constitutional History since 1837. Three credit hours. Spring Quarter. Three class meetings each week. Prerequisite, same as for History 631. Mr. Hockett.

A continuation of History 631.

633. The Slavery Controversy in the United States. Three credit hours. Autumn Quarter. Three class meetings each week. Prerequisite, History 403-404. Mr. Simms.

The ante-bellum South and its destruction; the Civil War in the light of the forces which tended to hasten or obstruct the clash of arms. Lectures, readings, and discussions.

634. Reconstruction and the New South (1863-1925). Three credit hours. Winter Quarter. Three class meetings each week. Prerequisite, same as for History 633. Mr. Simms.

The aftermath of the slavery struggle as traced in the reconstruction of the Southern States and in the readjustment of society and of the states to the new status of the Negro, and to the economic forces of the last half century. Lectures, readings, reports, and discussions.

635. American Diplomacy to the Close of the Civil War. Three credit hours. Autumn Quarter. Three class meetings each week. Prerequisite, History 403-404. Mr. Hill.

The foreign relations of the United States, beginning with the diplomacy which resulted in the establishment of independence and including such subjects as the struggle for neutral rights and commercial recognition, the extension of territory on the continent, the origin of the Monroe Doctrine, and the international controversies of the Civil War. Lectures, discussions, and reports.

636. American Diplomacy since the Civil War. Three credit hours. Winter Quarter. Three class meetings each week. Prerequisite, same as for History 635. Mr. Hill.

Problems in the diplomacy of the United States resulting from the Civil War, the development of the Monroe Doctrine, the acquisition of dependencies, relations with Latin America and the Orient, arbitration, the Isthmian Canal, and neutral rights during the Great War in Europe. Lectures, discussions, and reports.

637. Recent History of the United States (1875-1934). Three credit hours. Autumn Quarter. Three class meetings each week. Prerequisite, History 403-404. Mr. Wittke.

An intensive study, by the topical method, of political, constitutional, industrial, and social problems during the last fifty years. Among the topics to be considered are the economic revolution; the rehabilitation of the South; the transformation of the West; agrarian unrest; third party movements; money and banking, and the tariff. Lectures, textbook, collateral readings, and discussions.

638. Recent History of the United States (1875-1934). Three credit hours. Winter Quarter. Three class meetings each week. Prerequisite, History 403-404. Mr. Wittke.

This course is the natural continuation of History 637, but may be taken separately. Among the topics to be considered are: the rise of capitalistic combinations; transportation problems; the labor movement; the woman's movement; immigration; the trend of political reform; the foreign contacts of the United States; the problems of reconstruction after the World War; "The New Deal." Lectures, textbook, collateral readings, and discussions.

639. The Influence of Immigrant Groups upon United States History. Five credit hours. Spring Quarter. Five class meetings each week. Prerequisite, History 403-404. Mr. Wittke.

The share of different immigrant groups in the building of the nation, from the colonial period to the present, with special emphasis on the influence of immigration upon American political, economic, social and cultural development. Lectures, readings, and discussions.

640. The Pioneer in American History to 1812. Three credit hours. Autumn Quarter. Three class meetings each week. Prerequisite, History 403-404. Mr. Hockett.

This course, together with History 641, follows the expansion of settlement westward from the Atlantic coast, picturing the life of the pioneers and the rise of new communities, and tracing their influence upon national development. Lectures, discussions, and reports.

641. The Pioneer in American History since 1812. Three credit hours. Spring Quarter. Three class meetings each week. Prerequisite, same as for History 640. Mr. Hockett.

A continuation of History 640.

643. Political Parties in the United States. Five credit hours. Winter Quarter. Five class meetings each week. Prerequisite, History 403-404. Mr. Roseboom.

The radical party of the Revolution; the origin and growth of national parties; the slavery issue in party politics; the effect of the Civil War upon parties; party development in recent American history, special attention being devoted to the influence of the new economic and social conditions in creating new parties and policies. Lectures, readings, discussions, and reports.

644. The Colonization of North America. Three credit hours. Spring Quarter. Three class meetings each week. Prerequisite, History 403-404. Mr. Roseboom.

A survey of the transplanting of European culture and institutions to North America. Colonizing methods of the leading colonial powers will be considered as well as the expansion of their colonies and the resulting international struggle for supremacy, with special emphasis upon English colonization and institutional development. Lectures, readings, reports, and discussions.

645. Latin America. Three credit hours. Winter Quarter. Three class meetings each week. Mr. Hill.

The European background; native cultures of the New World; conquest and settlement; political, social, and economic institutions; the wars for independence. This course affords a natural introduction to History 646. Lectures, readings, and discussions.

646. Latin America. Five credit hours. Spring Quarter. Five class meetings each week. Mr. Hill.

The evolution of the A B C powers and Mexico, with minor consideration of the other republics; major problems of an inter-American and an international nature. This course is a logical continuation of History 645. Lectures, readings, and discussions.

647. History of Canada. Five credit hours. Spring Quarter. Five class meetings each week. Mr. Wittke.

An intensive study of Canadian history with special emphasis on the relations of Canada with the United States and with the mother country, and the comparison of Canadian institutions and problems with our own. Lectures, textbook, collateral readings, and discussions.

649. Greek Civilization. Three credit hours. Winter Quarter. Three class meetings each week. Mr. McDonald.

A study of the contributions of Greece to Western Civilization; political institutions, law, religion, drama, literature, science, and philosophy. Lectures, readings, and discussions.

650. Roman Civilization. Three credit hours. Autumn Quarter. Three class meetings each week. Mr. McDonald.

A study of Roman contributions to Western Civilization; political institutions, Roman law, religions in the Roman Empire with special reference to Christianity, slavery, agriculture, economic life, etc. Lectures, readings, and discussions.

***653. The Ancient History of the Near East.** Three credit hours. Autumn Quarter. Three class meetings each week. Mr. McDonald.

A survey of the history of Egypt, Sumer, Akkad, Babylon, and Assyria. Lectures, readings, and reports.

654. The Age of the Crusades. Three credit hours. Spring Quarter. Three class meetings each week. Prerequisite, a major in history. Advanced students from other departments without this prerequisite must obtain consent of the instructor. Mr. McNeal.

Conditions in western Europe preceding the First Crusade, the influence of the early crusading movements on the development of western Europe in the twelfth century, contemporary accounts of the Crusades. Readings, lectures, and reports on contemporary sources.

* Not given in 1935-1936.

655. Greek History. Five credit hours. Autumn Quarter. Five class meetings each week. Mr. McDonald.

An intensive study of Greece, with a brief introductory survey of the ancient civilization of the Near East. Lectures, readings, reports, and discussions.

656. Roman History. Five credit hours. Winter Quarter. Five class meetings each week. Mr. McDonald.

This course is the natural continuation of History 655. Lectures, readings, reports, and discussions.

705-706-707. Honors Courses. Three to five credit hours. Autumn, Winter, and Spring Quarters. Informal conferences, the intent being to allow full scope to the initiative of the student. Prerequisite, Senior standing and forty hours of credit in history, with the record of "A" in at least half of the History courses and an average of "B" in the remainder. At least two Quarters required of candidates for the degree of Bachelor of Arts with Distinction in History (see page 34). Mr. Wittke, with the cooperation of other members of the department.

A special topic is assigned to each student each Quarter, and results are tested by the requirement of theses and a special examination. Inability to attain a grade of "B" in this course will be a disqualification for special honors.

FOR GRADUATES

An undergraduate student shall not be permitted to take any course in the "800" group except by permission of the Graduate Council.

For description of graduate courses in this department, and for the requirements for advanced degrees, see the Bulletin of the Graduate School.

HOME ECONOMICS

Office, 220 Campbell Hall

PROFESSORS GORRELL AND McKAY, ASSISTANT PROFESSOR SMITH, MISS RYAN, MISS HUGHES, MISS HEINER, MISS UFER

Students who wish to carry additional courses in this Department are reminded that the College of Arts and Sciences permits thirty hours of work to be carried in courses offered in the Bulletins of other Colleges. See Bulletin of the School of Home Economics for further courses in this Department.

508. Clothing. Five credit hours. One Quarter. Winter and Spring. Three meetings for class discussion and two two-hour laboratory periods each week. It is recommended that Home Economics 401 be scheduled previously or concurrently. Not open to students majoring in home economics except with approval of adviser. Miss Ryan, Miss Heiner.

A course in clothing selection and construction planned to meet the needs of those who wish to acquire a general knowledge of the subject.

Not open to students who have credit for Home Economics 404.

510. Elements of Nutrition. Three to five credit hours. Winter Quarter. Three meetings for class discussion. Students who register for five credit hours will have two two-hour laboratory periods in addition. Not open to students majoring in home economics except with approval of adviser. This course is of equal interest to men and women. Miss McKay, Miss Hughes.

A course for the general student. Food as a factor in health. The essentials of an adequate diet. Food plans to meet these essentials. In the laboratory, an application is made of some of the modern theories in regard to cookery. Planning, preparing, and serving meals for the family group.

518. Elements of Homemaking. Five credit hours. Spring Quarter. Five meetings for class discussion each week. Not open to students majoring in home economics. Elective to other Juniors and Seniors. This course is of equal interest to men and women. Mrs. Gorrell, Miss Smith, Miss Ufer.

A non-technical course in which the principles of home management are introduced, and the use of the resources of the family are studied in their relation to family well-being.

ITALIAN

(See Romance Languages and Literatures)

JOURNALISM

Office, Journalism Building

ASSOCIATE PROFESSOR POLLARD, ASSISTANT PROFESSORS GETZLOE AND LUXON

Students who wish to carry additional courses in this Department are reminded that the College of Arts and Sciences permits thirty hours of work to be carried in courses offered in the Bulletins of other Colleges. See Bulletin of the School of Journalism for further courses in this Department.

401. Introduction to Journalism. Five credit hours. One Quarter. Autumn, Winter, Spring. Five lectures and discussion hours each week. Not open to Freshmen. Mr. Getzloe, Mr. Luxon.

The first half of the Quarter is given to a survey: journalism as a profession and as a business; opportunities in the field; the press today; modern methods of newspaper production. The second half deals with the work of the beginner in journalism, with special emphasis on the theory and practice of newspaper reporting.

402. News-Collecting and News-Writing. Five credit hours. One Quarter. Autumn, Winter, Spring. Three recitations and two laboratory periods each week on the Lantern. Prerequisite, Journalism 401. Mr. Getzloe, Mr. Luxon.

A continuation of Journalism 401.

LATIN LANGUAGE AND LITERATURE

(See Classical Languages and Literature)

MATHEMATICS

Office, 307 University Hall

PROFESSORS KUHN, RASOR, MORRIS, BLUMBERG, WEAVER, RADO, AND MacDUFFEE, ASSISTANT PROFESSORS BAREIS, BEATTY, CARIS, RICKARD, BAMFORTH, AND LAPAZ, MISS JONES, AND ASSISTANTS

The following sequences in mathematics are recommended:

I. For meeting the requirements of the Junior Division in natural science:
(1) 421, 422, 423
(2) 431, 432, 433

II. For teachers of mathematics in secondary schools and junior colleges:
(1) 421, 422, 423, or 431, 432, 433, followed by 441, 442
(2) 443, 641, 601
(3) 621, 623
(4) Education 687 (Teaching of Mathematics)

In this group, sequence (1) should be supplemented by two or more elections from each of the sets (2) and (3).

III. Those preparing to teach in colleges and universities or to work in the more advanced fields of mathematics, after completing 443 should advise with members of the department with reference to elections. It is recommended that all such students acquire a reading knowledge of French, German, and Italian as early as possible.

IV. Students in the College of Engineering are required to secure credit for courses 431, 432, 433, 441, 442, 443, except that 443 is not required of students in Architecture, Mine and Ceramic Engineering. Students in the combined Arts-Engineering course and other students intending to transfer to the College of Engineering should complete these requirements during the first two years. Other courses offered by the Department of Mathematics are open as electives to students in the College of Engineering.

V. For elementary work in statistics and finance:
421 or 432, 429, 435

VI. For advanced statistical work:
First year: 421, 422, 423, or 431, 432, 433
Second year: 441, 442, 443
Third year: 601, 607
Fourth year: 691, 692, 696

Proficiency examinations are available to qualified students in College Algebra, Trigonometry, Analytic Geometry, Calculus. Any student desiring to take a proficiency examination in any of these subjects should consult the Department.

421. College Algebra. Five credit hours. One Quarter. Autumn, Winter, Spring. Prerequisite, one unit of entrance algebra and one unit of entrance geometry. All instructors.

Fundamental ideas and topics of college algebra. Designed, along with the allied courses, Mathematics 422, 429, 435, to give students in the arts and sciences a conception of the character and possibilities of modern mathematics, especially in relation to its uses in other subjects.

422. Plane Trigonometry. Five credit hours. One Quarter. Autumn, Winter, Spring. Prerequisite, one unit of entrance algebra and one unit of entrance geometry. All instructors.

Solution of right and oblique triangles, theory and use of logarithms, solution of trigonometric equations and identities, various applications to the arts and sciences.

423. Analytic Geometry. Five credit hours. Spring Quarter. Prerequisite, Mathematics 421 and 422 or 431 and 432. All instructors.

429. Mathematics of Finance. Five credit hours. One Quarter. Autumn and Winter. Prerequisite, Mathematics 421 or 432. Mr. Kuhn, Mr. Morris.

The principles of interest and discount with applications to annuities, sinking funds, capitalization, depreciation, valuation of bonds, building and loan associations.

431. Plane Trigonometry. Five credit hours. One Quarter. Winter and Spring. Prerequisite, one and one-half units of entrance algebra and one unit of entrance geometry. All instructors.

432. College Algebra. Five credit hours. One Quarter. Autumn and Winter. Prerequisite, one and one-half units of entrance algebra and one unit of entrance geometry. All instructors.

433. Analytic Geometry. Five credit hours. One Quarter. Autumn and Spring. Prerequisite, Mathematics 431 and 432 or 421 and 422. All instructors.

435. Elementary Mathematical Statistics. Five credit hours. Spring Quarter. Prerequisite, Mathematics 421 or 432. Mr. Morris.

Representation of statistical data by difference, frequency and logarithmic curves; averages; statistical constants; total and partial correlation; index numbers; formulas used in mental measurements; the normal curve; applications in economics, biology, psychology, and educational research.

441-442-443. Calculus. Five credit hours. Three Quarters. 441, Autumn and Winter; 442, Winter and Spring; 443, Autumn and Spring. Prerequisite, Mathematics 423 or 433. All instructors.

FOR ADVANCED UNDERGRADUATES AND GRADUATES

According to the University regulations, courses in this group are not open to Freshmen or Sophomores.

601. Advanced Calculus. Five credit hours. Autumn Quarter. Prerequisite, Mathematics 443. Mr. Rasor.

Selected topics from Advanced Calculus.

607. Introduction to the Theory of Functions of a Complex Variable. Five credit hours. Winter Quarter. Prerequisite, Mathematics 601. Mr. Rasor.

The algebra of complex numbers with their corresponding geometric representation; conformal representation; theory of power series; definition and properties of analytic functions; introduction to the theory of functions as developed by Cauchy, Riemann, and Weierstrass.

611. Differential Equations. Five credit hours. Winter Quarter. Prerequisite, Mathematics 443. Mr. Kuhn.

Linear equations with constant coefficients; equations of first, second, and higher orders; numerical approximations; solutions in series; existence theorems of Picard, Cauchy, and Frobenius; simple partial differential equations; applications.

***617. Introduction to Modern Mathematics.** Five credit hours. Autumn Quarter. Prerequisite, ten credit hours in mathematics beyond Mathematics 443, or permission of the instructor. Mr. Blumberg.

The principal aim of this course is not the imparting of comprehensive information but the initiation of the student, by means of lectures, collateral reading and problems, into various mathematical domains. The content will be selected from the following fields: Graphical and Numerical Methods, Projective Geometry, Theory of Numbers, The Mathematical Continuum, Mathematical Foundations, Point Sets, Groups, Probability, and Relativity.

621. Advanced Euclidean Geometry. Five credit hours. Winter Quarter. Prerequisite, Mathematics 442. Mr. Weaver.

Geometric constructions; points, lines, and circles associated with a triangle; harmonic ranges and pencils; harmonic properties of the circle; radical axis; pole and polar with respect to a circle; inversion; symmedian points; Brocard points. This is chiefly a problem course in the field of plane geometry, and is of special value to teachers of this subject.

623. Projective Geometry. Five credit hours. Spring Quarter. Prerequisite, Mathematics 443. Miss Bareis.

Plücker line coordinates, duality, infinite elements, projection, double ratio, projective coordinates in one and two dimensions, projective transformations, collineations and involutions in one dimension, projective properties of conics.

625. Solid Analytic Geometry. Five credit hours. Autumn Quarter. Prerequisite, Mathematics 443. Given in alternate years. Miss Bareis.

Systems of coordinates; planes and lines; types of surfaces; quadric surfaces; duality.

641. Elementary Theory of Equations. Five credit hours. Autumn Quarter. Prerequisite, Mathematics 443. Mr. Kuhn.

Construction with ruler and compasses, numerical equations, determinants, symmetric functions. Text: Dickson's First Course in the Theory of Equations.

661. Vector Analysis. Five credit hours. Spring Quarter. Prerequisite, Mathematics 601 and Physics 433, or the equivalent. Mr. Weaver.

Vector and scalar algebra and geometry, differentiation and differential operators, applications to electrical theory and to mechanics, dynamics, and hydro-dynamics.

***671. Introduction to the Theory of Relativity.** Five credit hours. Autumn Quarter. Prerequisite, Mathematics 661. Mr. Blumberg.

This course will be prefaced by a brief review of those parts of the classical theories of dynamics and physics which are necessary to an understanding of the special theory of relativity, its applications, and the elementary aspects of the general theory of relativity.

***691. Probability.** Five credit hours. Autumn Quarter. Prerequisite, Mathematics 601. Given in alternate years. Mr. Morris.

The first half of the course will be devoted to the development of the theory of probability from the standpoint of permutations, combinations, choice and chance; the second half to a formal development of the subject as given by Coolidge in "Introduction to Probability."

***692. Finite Differences.** Five credit hours. Winter Quarter. Prerequisite, Mathematics 691. Given in alternate years. Mr. Morris.

An introduction to finite differences; development of the more important methods of interpolation and summation.

***696. Statistics.** Five credit hours. Spring Quarter. Prerequisite, Mathematics 692. Given in alternate years. Mr. Morris.

Derivation of statistical formulas by use of the theory of probability; least squares and their application to curve fitting; frequency distribution curves.

700. Minor Problems. Three to five credit hours. Autumn, Winter, and Spring Quarters.

This course consists of conference, assigned readings, and reports for minor investigations.

701. Introduction to Analysis I. Five credit hours. Autumn Quarter. Prerequisite, permission of instructor. Mr. Blumberg.

The principal aim will be to train the student to handle with some facility various fundamental notions and methods in analysis. The subject matter will be selected from the following topics: the real continuum; introduction to the Theory of Point Sets; basal notions in the field of real functions; measure; Riemann, Lebesgue, and other integrals; multiple integrals; Green's and related theorems; implicit functions; series, and in particular, introduction to Fourier series.

* Not given in 1935-1936.

702. Introduction to Analysis II. Five credit hours. Winter Quarter. Prerequisite, permission of instructor. Mr. Blumberg.
A continuation of Mathematics 701.

703. Introduction to Analysis III. Five credit hours. Spring Quarter. Prerequisite, permission of instructor. Mr. Blumberg.
A continuation of Mathematics 702.

***741. Introduction to Higher Geometry I.** Five credit hours. Autumn Quarter. Prerequisite, permission of instructor. Mr. Radó.
Metric, affine, and projective properties of conic sections and of quadric surfaces. Fundamental notions of differential geometry. Geometry on a surface. Non-Euclidean geometries. Groups of transformations.

***742. Introduction to Higher Geometry II.** Five credit hours. Winter Quarter. Prerequisite, permission of instructor. Mr. Radó.
A continuation of Mathematics 741.

***743. Introduction to Higher Geometry III.** Five credit hours. Spring Quarter. Prerequisite, permission of instructor. Mr. Radó.
A continuation of Mathematics 742.

761. Introduction to Higher Algebra I. Five credit hours. Autumn Quarter. Prerequisite, permission of instructor. Mr. MacDuffee.
Elementary theory of number; congruences; binary forms; continued fractions; groups; fields; matrices; invariants; elementary divisors; Galois fields; algebraic fields; ideals.

762. Introduction to Higher Algebra II. Five credit hours. Winter Quarter. Prerequisite, permission of instructor. Mr. MacDuffee.
A continuation of Mathematics 761.

763. Introduction to Higher Algebra III. Five credit hours. Spring Quarter. Prerequisite, permission of instructor. Mr. MacDuffee.
A continuation of Mathematics 762.

FOR GRADUATES

An undergraduate student shall not be permitted to take any course in the "800" group except by permission of the Graduate Council.

For description of graduate courses in this department see the Bulletin of the Graduate School.

METEOROLOGY

(See Geology 420)

MILITARY SCIENCE AND TACTICS

Office, The Armory

COLONEL TOWNSEND; LIEUTENANT COLONEL FRENCH; MAJOR McCLURE; CAPTAINS BARRY, CAMP, HAMILTON, COCHRAN, GAHAN, AND ST. JAMES; LIEUTENANTS HINTON, MIDDLETON, WILLIAMSON, MURPHY, ADAMSON, WILLIAMS, BLAKENEY, KIDWELL, AND McFARLAND; NON-COMMISSIONED OFFICERS OF INFANTRY, FIELD ARTILLERY, AND SIGNAL CORPS

In accordance with the Morrill Act, passed in 1862, under which the University was established, military instruction must be included in the curricula. The Board of Trustees, therefore, requires all male students, both special and regular, unless excused by the Department of Military Science and Tactics, to receive military instruction during the first two years in Infantry, Field Artillery, or Signal Corps, the choice at the option of the student.

The Reserve Officers' Training Corps was established under the National Defense Act of June 3, 1916, and June 4, 1920, the required two years' work being included in its four-year course, the third and fourth years being elective. Instruction is given in Infantry, Field Artillery, and Signal Corps.

Uniform is furnished Freshmen upon deposit of approximately $25.00 being made with the Contractor. The University has adopted its own style of uniform, which is required to last two

* Not given in 1935-1936.

years. Last year the Basic Course students were paid commutation of uniform amounting to $9.00 each for the academic year. This allowance is prorated monthly to students who do not remain in attendance during the entire academic year, but is paid by the Bursar in whole or in part only at the close of the Spring Quarter of each academic year.

Students taking Advanced Courses in Military Science receive commutation of rations which last year amounted to twenty-six cents a day and is payable quarterly, and commutation of uniform which last year amounted to $29.00 for the First Year Advanced men (Juniors), and to $7.00 for the Second Year Advanced men (Seniors).

The total credit in this department allowed toward a degree is 18 Quarter-hours exclusive of Infantry 401-402-403, 404-405-406, Field Artillery 421-422-423, 424-425-426, or Signal Corps 441-442-443, 444-445-446, required of all male students in the first and second years, for which 6 credit hours are granted.

SUMMER CAMPS

As a part of the instruction of the Reserve Officers' Training Corps, summer camps are conducted for the Advanced Course students at the end of their junior year. These camps are of six weeks' duration and the work is entirely practical. The Government furnishes transportation to and from the camps. While in camp, clothing, subsistence, medical attention, and entertainment are provided. The students attending advanced course camp receive a salary of seventy cents per day. The development of leadership and discipline are primary objects of these camps.

INFANTRY

401-402-403. Basic Infantry. One credit hour each Quarter. Autumn, Winter, Spring.

The National Defense Act. Obligations of citizenship. Military courtesy and discipline. Military organization, leadership. Hygiene and first aid. Map reading. Rifle marksmanship. Military history and policy. Current international situation.

404-405-406. Basic Infantry. One credit hour each Quarter. Autumn, Winter, Spring. Prerequisite, Military Science 401-402-403.

Leadership. Combat training, military history. Weapons.

507-508-509. Advanced Infantry. Three credit hours each Quarter. Autumn, Winter, Spring. Elective. Prerequisite, six Quarters of basic military science.

Aërial photograph reading, leadership, weapons, combat training.

510-511-512. Advanced Infantry. Three credit hours each Quarter. Autumn, Winter, Spring. Elective. Prerequisite, Military Science 507-508-509.

Leadership. Military law. Military history. Company administration and supply. Combat training.

FIELD ARTILLERY

421-422-423. Basic Field Artillery. One credit hour each Quarter. Autumn, Winter, Spring.

National Defense Act and R.O.T.C. Obligations of citizenship. Military history and policies. Current international situation. Military courtesy and customs of the service. Military sanitation and first aid. Military organization and organization of the Field Artillery. Leadership. Elementary gunnery. Duties of cannoneers and the firing battery. Field Artillery ammunition and materiel.

424-425-426. Basic Field Artillery. One credit hour each Quarter. Autumn, Winter, Spring. Prerequisite, Military Science 421-422-423.

Fire control instruments. Map and aërial photograph reading. Battery communications. Duties of the Battery Commander's Detail. Leadership. Care of animals and stable management. Equitation. Driving and draft.

527-528-529. Advanced Field Artillery. Three credit hours each Quarter. Autumn, Winter, Spring. Elective. Prerequisite, six Quarters of basic military science.

Reconnaissance, selection, occupation of position. Duties of Battery Officers. Use of Battery Commander's Detail. Field Artillery signal communications. Liaison with Infantry. Leadership. Elementary ballistics and dispersion. Preparation of fire. Conduct of fire. Equitation. Driving and draft.

530-531-532. Advanced Field Artillery. Three credit hours each Quarter. Autumn, Winter, Spring. Elective. Prerequisite, Military Science 527-528-529.

Leadership. Command and instruction of student organizations. Transport. Tactics. Military history and policy. Military law and administration. The law of military offenses. Courts-martial. Administration.

SIGNAL CORPS

The Signal Corps Unit is open to those students regularly enrolled in either the curriculum in Electrical Engineering or in Engineering Physics. Selected amateur radio operators may also pursue the Signal Corps courses. The Signal Corps course begins with the Freshman Year.

441-442-443. Basic Signal Corps. One credit hour each Quarter. Autumn, Winter, Spring.

National Defense Act and the R.O.T.C. Obligations of citizenship. Military history and policy. Current international situation. Military discipline, courtesies and customs of the service. Military sanitation and first aid. Military organization. Map reading. Leadership. Wire communication. Radio communication.

444-445-446. Basic Signal Corps. One credit hour each Quarter. Autumn, Winter, Spring. Prerequisite, Military Science 441-442-443.

Aerial photograph reading. Pistol. Leadership. Radio communication.

547-548-549. Advanced Signal Corps. Three credit hours each Quarter. Autumn, Winter, Spring. Elective. Prerequisite, six Quarters of basic military science.

Company administration and supply. Mechanization. Leadership. Wire communication. Signal communication for all arms and services. Message centers. Wire, installation, operation, and maintenance. Wire, testing. plant, and traffic. Radio communication, installation, operation and maintenance. Signal communication tactics. Combat orders and solution of problems.

550-551-552. Advanced Signal Corps. Three credit hours each Quarter. Autumn, Winter, Spring. Elective. Prerequisite, Military Science 547-548-549.

Military law. Supply and mess management. Organization of the Infantry division. Training management, unit training. Property, emergency procurement and funds. O. R. C. regulations. Signal Company and Signal Troop combat orders. Mobilization. Military history and policy. General signal communication. Signal communication tactics. Tactical signal communication in Infantry and Cavalry Divisions. Signal staff duties.

NOTE: All Electrical Engineering and Engineering Physics students who elect to take Advanced Signal Corps Courses are required to take Electrical Engineering 611, 716, and 717 in addition to Military Science 547, 551, and 552. Such students are not required to take Military Science 548, 549, and 550.

MINERALOGY
Office, 115 Lord Hall

PROFESSOR McCAUGHEY, ASSOCIATE PROFESSOR BRANT

Students who wish to carry additional courses in this Department are reminded that the College of Arts and Sciences permits thirty hours of work to be carried in courses offered in the Bulletins of other Colleges. See Bulletin of the College of Engineering for further courses in this Department.

401. Crystallography and Descriptive Mineralogy. Three credit hours. One Quarter. Autumn, Winter, Spring. Two lecture or quiz periods and one two-hour laboratory period each week. Prerequisite, Chemistry 403 or 413. Mr. McCaughey, Mr. Brant.

Principles of crystallography. The study of the most important of the thirty-two crystal groups using models and crystallized minerals. Drawing of crystals. Study of minerals comprising the native elements and sulphides.

402. Descriptive Mineralogy. Three credit hours. One Quarter. Autumn, Winter, Spring. Two lecture or quiz periods and one two-hour laboratory period each week. Prerequisite, Mineralogy 401. Mr. McCaughey, Mr. Brant.

Physical and chemical properties, origin, association and occurrence of the more important minerals. Sight identification of minerals by the use of their important physical characteristics and associations. Continuation of Mineralogy 401.

404. Determinative Mineralogy. Three credit hours. Spring Quarter. One lecture and two three-hour laboratory periods each week. Prerequisite, Mineralogy 402. Mr. Brant.

Instruction and practice with the blowpipe in the identification of minerals and the quantitative estimation of gold, silver, and copper.

FOR ADVANCED UNDERGRADUATES AND GRADUATES

According to the University regulations, courses in this group are not open to Freshmen or Sophomores.

601. Advanced Crystallography. Five credit hours. Spring Quarter. Mr. McCaughey.

Study of the thirty-two crystal groups and their representative crystals. Structure of crystals as determined by X-ray analysis. Laboratory practice with the two-circle gomometer in the measurement of crystals and in the drawing and projection of crystals.

605. Thermochemical Mineralogy. Three credit hours, Autumn Quarter; four credit hours, Spring Quarter. Three or four lectures each week. Prerequisite, an acceptable course in physical chemistry. Mr. McCaughey.

Thermal properties of minerals, their formation and transformation in silicate mixtures.

611. Elementary Microscopic Petrography. Four credit hours. Winter Quarter. Two lectures and two two-hour laboratory periods each week. Prerequisite, Mineralogy 402 and Geology 609, or a college course in physics, including light. Mr. McCaughey, Mr. Brant.

Instruction and practice in the use of the petrographic microscope in the identification and study of minerals and rocks in thin section.

621. Microscopic Mineralogy. Five credit hours. Autumn Quarter. Two lectures and three two-hour laboratory periods each week. Prerequisite, Mineralogy 402, and a college course in physics covering light. Mr. McCaughey, Mr. Brant.

The use of a polarizing microscope in the identification of minerals in fine powder and thin section. Determination of the optical constants of minerals and crystallized substances with the polarizing microscope.

631. Mineralogical Investigations. Three to five credit hours. One Quarter. Autumn, Winter, Spring. Library, conference and advanced laboratory work. Prerequisite, Mineralogy 402 and 621 or 611. Mr. McCaughey.

(a) **Microscopic Petrography.** Study and investigation of igneous, metamorphic, and sedimentary rocks in thin section.

(b) **Soil Mineralogy.** Mineralogical investigation of loose rocks, such as soils, sand, and clays.

(c) **Applied Microscopic Mineralogy.** Application of the principles of microscopic mineralogy to the determination of melting and transformation temperature of minerals; microscopic study of refractories, ceramic products and glasses.

(d) **X-ray Crystal Analysis.** Practice in the application of X-rays to the study of minerals and crystallized materials. Calculation for and determination of the "fine structure" of crystals.

654. X-rays and Crystal Structure. Three credit hours. Winter Quarter. Three lectures and recitations each week. Prerequisite, calculus and one year of college physics. Given in alternate years. Mr. Blake, Mr. McCaughey, Mr. Mack, Mr. Harris.

This course is designed for those students in physics, chemistry, and mineralogy who intend to do research work in crystal structures and X-ray analysis.

This course is the same as Chemistry 654 and Physics 654.

Not open to students who have credit for Physics 814.

MUSIC

Offices, 1, 2, 3, 4 Page Hall

PROFESSORS HUGHES, WEIGEL, LEEDER, DIERCKS, AND WILSON, ASSISTANT PROFESSORS JONES, THOMAS, SLAWSON, HARDY, AND DIERKER, MRS. SHERMAN, MISS PHILLIPS, MISS OLWEN JONES, MR. HAVEN, AND ASSISTANTS

Students who wish to carry additional courses in this Department are reminded that the College of Arts and Sciences permits thirty hours of work to be carried in courses offered in the Bulletins of other Colleges. See Bulletin of the College of Education for further courses in this Department.

423. Elementary Music I. Five credit hours. Autumn Quarter. Ten laboratory periods each week. No prerequisite. Required of all freshmen in all curricula in music. Mr. Diercks, Mrs. Sherman, Miss Hardy, Miss Edith Jones, Miss Olwen Jones, Miss Phillips, Mr. Haven.

Six periods weekly are spent in sight-singing and ear-training drill and in the study of terminology and elementary theory. Two additional periods are devoted to the study of piano and two to the study of voice.

Not open to students who have credit for Music 476 or 480.

424. Elementary Music II. Five credit hours. Winter Quarter. Ten laboratory periods each week. Prerequisite, Music 423. Required of all freshmen in all curricula in music except those who have been assigned to Music 426. Mr. Diercks, Mrs. Sherman, Miss Hardy, Miss Edith Jones, Miss Olwen Jones, Miss Phillips, Mr. Haven.

Continuation of Music 423.

Not open to students who have credit for Music 478 or 480.

425. Elementary Music III. Five credit hours. Spring Quarter. Ten laboratory periods each week. Prerequisite, Music 424. Required of all freshmen in all curricula in music except those who have been assigned to Music 426. Mr. Diercks, Mrs. Sherman, Miss Hardy, Miss Edith Jones, Miss Olwen Jones, Miss Phillips, Mr. Haven.

Continuation of Music 424.

Not open to students who have credit for Music 479 or 480.

426. Elementary Music IV. Six credit hours. Autumn Quarter. Ten laboratory periods each week. Prerequisite, consent of the instructor. Miss Dierker, Mr. Diercks, Mrs. Sherman, Miss Hardy, Miss Edith Jones, Miss Phillips, Miss Olwen Jones.

Six periods weekly are spent in sight-singing and ear-training drill and in the study of terminology and elementary theory. Two additional periods are devoted to the study of piano and two to the study of voice. This course is designed for students with a musical background superior to that of the average freshman student. The course will be accepted in place of Music 423, 424, and 425 and work will be assigned to cover these three courses.

Not open to students who have credit for Music 479 or 480.

430. History and Appreciation I. Four credit hours. Winter Quarter. Four lectures each week. Prerequisite, sophomore standing. Mr. Hughes.

An introduction to the appreciation of music. Study of the minor factors involved in intelligent listening with special reference to musical form. A brief survey of the history of the art.

Not open to students who have credit for Music 301 or 302.

431. History and Appreciation II. Four credit hours. Spring Quarter. Four lectures each week. Prerequisite, Music 430. Mr. Hughes.

Style, form, and content of compositions of the polyphonic and classical periods.

460. Harmony. Three credit hours. Autumn Quarter. Three recitations each week. Prerequisite, three Quarters of Sight Singing and Ear Training or its equivalent. Miss Jones and assistant.

Review of scales and a thorough drill in the reading and hearing of intervals. Introduction of primary triads, the dominant seventh chord and simple modulations. Keyboard practice.

Not open to students who have credit for Music 408 and 409 or 351 and 352.

461. Harmony. Three credit hours. Winter Quarter. Three recitations each week. Prerequisite, Music 460. Miss Jones and assistant.

Further practice in simple modulation. Secondary seventh chords. The dominant ninth chord. Modulation to more remote keys. Continuation of Music 460.

462. Harmony. Three credit hours. Spring Quarter. Three recitations each week. Prerequisite, Music 461. Miss Jones and assistant.

Altered chords. Modulation to remote keys. Continuation of Music 461.

463. Advanced Harmony. Three credit hours. Autumn Quarter. Three recitations each week. Prerequisite, Music 462. Miss Jones and assistant.

Non-harmonic tones. Advanced problems in chromatics and modulation.

465. Harmonic Analysis. Three credit hours. Winter Quarter. Three recitations each week. Prerequisite, Music 463. Miss Jones and assistant.

Analysis and discussion of chords and non-harmonic tones.

468. Form. Three credit hours. Spring Quarter. Three recitations each week. Prerequisite, Music 463. Miss Jones and assistant.

Continuation of the study of form begun in Music 430. More detailed examination into the elements and development of form.

CAMPUS MUSIC GROUPS

Participation in University music activities is open to all students in the University. Membership in more than one music group, in the case of Freshmen, shall be with the approval of the student's Junior Dean.

All students majoring in music are required to enroll for either Music A, B, C, or D during each Quarter of residence. Choice of these groups will be with the written approval of the department and the group director.

Music A. University Chorus. No credit. Autumn, Winter, and Spring Quarters. Two or three rehearsals each week. Mr. Diercks.

Open to students in any department of the University. Acceptance for the course is subject to the written approval of the director after individual conference.

Music B. University Orchestra. No credit. Autumn, Winter, and Spring Quarters. Three rehearsals each week. Mr. Weigel.

Open to students in any department of the University. Acceptance for the course is subject to the written approval of the director after individual conference.

Music C. The University Marching Bands. No credit. Autumn, Winter, and Spring Quarters. Three or more rehearsals and drill periods each week. Open only to Juniors and Seniors who have earned six hours credit in Military Science (Band). Membership by permission of the director. Mr. Weigel and assistants.

The University Band operates as two or more military units. A combination of these units, or selected men from each, serves as a massed band for athletic events and military revues.

Music D. The University Band. No credit. Autumn, Winter, and Spring Quarters. Three rehearsals each week. Prerequisite, consent of the director. Mr. Weigel.

The University Band is a selected group of limited membership devoted to the preparation and performance of the best band literature. The group gives public concerts and supplies music for University functions. Membership is open to students of any year or department but is limited to performers of superior ability.

Music E. Women's Glee Club. No credit. Autumn, Winter, and Spring Quarters. Miss Slawson.

Membership in this group is open to all women students in the University. Examinations are held at stated periods and vacancies in the club filled with the best available voices. The majority of elections take place in the Autumn Quarter.

Music G. Men's Glee Club. No credit. Autumn, Winter, and Spring Quarters. Mr. Diercks.

Membership in this group is open to all men students in the University. Examinations are held at stated periods and vacancies in the club filled with the best available voices. The majority of elections take place in the Autumn Quarter.

FOR ADVANCED UNDERGRADUATES AND GRADUATES

According to the University regulations, courses in this group are not open to Freshmen or Sophomores.

601. The Romanticists. Four credit hours. Autumn Quarter. Four lectures each week. Prerequisite, Junior standing in Music or permission of the instructor. Mr. Hughes.

The music of the romantic period in Germany and France.

602. Wagner and the Music Drama. Three credit hours. Autumn Quarter. Three lectures each week. Music, Instrumental curriculum, third year. Prerequisite, Junior standing in Music or permission of the instructor. Mr. Hughes.

Study of the works of Wagner and his contribution to the opera.

603. Modern Music. Four credit hours. Winter Quarter. Four lectures each week. Prerequisite, permission of the instructor. Mr. Hughes.

A brief survey of modern developments with special reference to the composers of France and Russia.

605. History of Choral Music. Three credit hours. Spring Quarter. Three lectures each week. Prerequisite, Junior standing in Music or permission of the instructor. Mr. Hughes.

Choral composers and literature with special consideration of the sixteenth and seventeenth centuries.

Not open to students who have credit for Music 305 and 306.

630. Instrumentation. Three credit hours. Autumn Quarter. Three recitations each week. Prerequisite, Music 462 and an amount of applied music satisfactory to the instructor. Mr. Wilson.

Scoring for brass or wood-wind instruments in small combinations and for full bands.

632. Instrumentation. Three credit hours. Winter Quarter. Three recitations each week. Prerequisite, Music 630. Mr. Wilson.

Scoring for stringed instruments, for strings in combination with other instruments, and for full orchestra.

650. Minor Problems. One to five credit hours. All Quarters. Prerequisite, the consent of the department. All instructors.

Investigation of minor problems in the field of music.

PHILOSOPHY

Office, 320 University Hall

PROFESSORS LEIGHTON, CHANDLER, AND AVEY, MR. LEVINGER, MR. REITHER, AND ASSISTANTS

The courses in philosophy are not ordinarily open to Freshmen, with the exception of 402, which is open to Freshmen who have completed two Quarters' work; 401, 402, and 405 are open to Freshmen of high standing in the College of Arts and Sciences who obtain the consent of the Junior Dean. Seniors receive full credit for all courses.

The courses fall into three groups. Those in the first group (401-405) are elementary in character and have no prerequisite. They are designed for students in the Junior Division who desire an introduction to philosophy as systematic reflection on the meaning and aims of human civilization.

The courses in the intermediate group (601-665) are more advanced and have prerequisites, although these prerequisites are not always in philosophy. These courses are designed for students, whether intending to specialize in literature, the social or natural sciences, or in philosophy itself, who desire a more thorough acquaintance with the history of thought and with the fundamental issues of present-day science, religion, and practical life. Courses bearing numbers between 600 and 650 deal with phases of the history of thought; courses bearing numbers between 650 and 700 are systematic, that is, they undertake to deal with current issues on their merits.

The following courses are relevant to all special interests since they deal with the most general underlying problems: 401, 402, 405, 601, 602, 603, 611, 653, 656, 661, 662, 665.

Courses related to literature and fine arts: 515, 607, 608, 653, 662, 665.

Courses related to mathematics and natural sciences: 402, 403, 652, 661.

Courses related to social science, psychology, and education: 405, 607, 610, 611, 652, 653, 656, 661, 662, 665.

Courses related to commerce and journalism: 402, 405, 656, 665.

Courses related to religion: 401, 405, 607, 608, 609, 610, 611, 653, 656, 661, 662, 665.

Students concentrating in philosophy may be guided by their special interests, but are advised to include 402, 405, 601, 602, 603, 661 and 662 in their programs. Students looking forward to graduate work in philosophy should lay fully as much stress upon securing a sound general cultural and scientific training as upon the special work of this department.

Candidates for honors must take 602, 661, 662.

†400. **Types of Philosophy.** Three credit hours. No prerequisite. Mr. Avey.

An elementary study of the essentials of the various types of philosophy which have been influential in world literatures, history, and science; Naturalism, Pragmatism, Dualism, Idealism, Mysticism.

Not open to students who have credit for or who contemplate taking Philosophy 401.

401. **Introduction to Philosophy.** Five credit hours. One Quarter. Autumn, Winter, Spring. No prerequisite. All instructors.

The meaning and scope of philosophy, its typical problems and theories, its relations to the special sciences and to social life and religion. The course is intended primarily for Sophomores desiring a general introduction to philosophy; it is not required for admission to any other course.

402. **Introduction to Reflective Thinking.** Five credit hours. One Quarter. Autumn, Winter, Spring. No prerequisite. All instructors.

A study of the methods employed in the search for facts, the formulation and testing of general principles, and the application of principles to specific cases. Illustrations are drawn from the processes of common sense, science, history, and law. A natural continuation of this course will be found in Philosophy 403.

403. **Formal Logic.** Five credit hours. Spring Quarter. Prerequisite, Philosophy 402 or consent of the instructor. Mr. Avey.

A study of the essentials of Aristotelian Logic; immediate and mediate inference (syllogism, hypotheticals, alternatives, etc.).

405. **Elementary Ethics.** Five credit hours. One Quarter. Autumn, Winter, Spring. No prerequisite. All instructors.

A critical and comparative study of ideals of human conduct.

515. **Esthetics.** Five credit hours. Winter Quarter. For Sophomores, Juniors, and Seniors. Prerequisite, one course in philosophy or fifteen hours in fine arts or music. Mr. Chandler.

A study of the various fine arts (including music and literature), and of the beauty of nature, with the aim of discovering their relation to human nature, their respective limitations, and their value for individual and social life.

Not open to students who have credit for Philosophy 655 or 415.

FOR ADVANCED UNDERGRADUATES AND GRADUATES

According to the University regulations, courses in this group are not open to Freshmen or Sophomores.

Courses bearing numbers 601 to 650 are historical; courses bearing numbers 651 to 700 are systematic.

NOTE: Unless otherwise specified the prerequisite to Philosophy courses in the "600" group is either (a) ten hours in Philosophy and ten hours in natural or social science, or (b) fifteen hours in natural science and fifteen hours in social science.

601. **Ancient Philosophy.** Five credit hours. Autumn Quarter. Four meetings each week, a fifth at the option of the instructor. Mr. Chandler.

The development of philosophical thought from the Greeks to the Middle Ages. Most of the time is devoted to Greek philosophy. A natural continuation of this course will be found in Philosophy 602; a more specialized treatment of medieval philosophy will be found in Philosophy 609.

602. **Modern Philosophy to Kant.** Five credit hours. Winter Quarter. Four meetings each week, a fifth at the option of the instructor. Mr. Reither.

The development of philosophical thought from the Renaissance to the end of the eighteenth century. A natural continuation of this course will be found in Philosophy 603. Philosophy 601 or 602 is recommended to advanced undergraduates of good scholastic standing as a first course in philosophy.

† Not given during the academic year, 1935-1936.

603. Philosophy since 1800. Five credit hours. Spring Quarter. Four meetings each week, a fifth at the option of the instructor. Prerequisite must include Philosophy 602 or 401. Mr. Chandler.

The development of philosophical thought from the beginning of the nineteenth century to the present. Special attention is given to the relations between philosophy, social movements, and literature.

***606. American Philosophy.** Three credit hours. Autumn Quarter. Prerequisite must include ten hours in Philosophy. Mr. Chandler.

A survey of the chief philosophical standpoints which have entered into the constitution of the American mind since colonial times; the life and works of the thinkers whose theories are considered.

***607. Development of Hebrew Ideas in the Old Testament.** Five credit hours. Spring Quarter. Four meetings each week, a fifth at the option of the instructor. Given in alternate years. Mr. Avey.

Methods of scholarly study of ancient historical documents are considered, and then applied to the writings of the Old Testament for the purpose of determining their chronological order. On this basis is developed a history of Hebrew ideas, including early tradition; the ideals of the prophets; legal formalism; religious poetry; the Messianic hope. A study of the philosophical significance of the Old Testament.

608. Philosophy and Poetry. Three credit hours. Autumn Quarter. Given in alternate years. Prerequisite must include ten hours of Philosophy. Mr. Chandler.

A discussion of Lucretius, Dante's "Divine Comedy," and Goethe's "Faust," for the light they throw on the history of thought and the nature of poetic excellence.

609. Medieval Philosophy. Three credit hours. Winter Quarter. Prerequisite must include either Philosophy 401, 601, 607, or 610. Mr. Levinger.

The development of philosophical thought from the Church Fathers, through the Arabic, Jewish and scholastic writers, to the Renaissance. A natural continuation of this course will be found in Philosophy 602.

***610. Origins of Christian Thought.** Three credit hours. Spring Quarter. Given in alternate years. Prerequisite must include either Philosophy 401, 601, 607 or 611. Mr. Avey.

A historical inquiry into the content and meaning of the psychological, ethical, and metaphysical teaching of the New Testament; with an inquiry into the development of Christian thought up to the formation of the Nicene Creed. A study of the philosophical significance of the New Testament.

611. Origin and Development of Religious Ideas. Five credit hours. Autumn Quarter. Four meetings each week, a fifth at the option of the instructor. Mr. Avey.

A general survey of the fundamental ideas of the most important historical religions, including primitive beliefs; Brahmanism; Buddhism; Confucianism; Mohammedanism; Judaism; the various forms of Christianity.

***623. Representative Greek Philosophers.** Five credit hours. Winter Quarter. Prerequisite must include Philosophy 401 and 601. Mr. Chandler.

***625. Representative Modern Philosophers.** Five credit hours. Winter Quarter. Given in alternate years. Prerequisite must include Philosophy 602. Mr. Reither.

A few representative works of classic thinkers of the period from Bacon and Descartes to Schopenhauer will be selected for intensive study.

***652. Philosophy of Science.** Three credit hours. Winter Quarter. Given in alternate years. Prerequisite must include ten hours of philosophy and ten hours in natural science, Philosophy 401 and 402, or their equivalent or twenty-five hours in natural science. Mr. Leighton.

A study and critical discussion of a few general interpretations of the methods and basic assumptions of the natural and social sciences.

653. Philosophy of Religion. Five credit hours. Spring Quarter. Four meetings each week, a fifth at the option of the instructor. Prerequisite must

* Not given in 1935-1936.

include one of the following: Philosophy 401, 405, 601, 602, 607, 610, 611, 656. Students are advised to take 611 as a background for this course. Mr. Avey.

The psychical and social nature of religion; a systematic examination of the fundamental religious conceptions—the idea of God in relation to the idea of the world, the idea of man, and the problems of human destiny.

656. Principles of Social Ethics. Three credit hours. Spring Quarter. Prerequisite, one of the following: Philosophy 401, 405, 601, 602, Psychology 621, Education 603, 632, or ten hours of social science. Mr. Reither.

Systematic development of a philosophy of human values, and its application to the chief forms and activities of civilized life—industrial and economic activities, the state, education, culture, and religion. Emphasis is laid on the social function of education as being the most important instrument of individual welfare and social progress.

660. Minor Problems. Two to ten credit hours. Autumn, Winter, and Spring Quarters. Prerequisite must include ten hours of philosophy. Mr. Chandler, Mr. Avey, Mr. Reither.

Students ordinarily expect to take this course for from two to five credit hours, but honors students may receive credit up to ten hours.

Topics for special study may be chosen from the following fields: ethics, logic, metaphysics, history of philosophy, religion (including Hebrew Ideas and Christian Origins), aesthetics.

661. Metaphysics of Knowledge and Nature. Three credit hours. Autumn Quarter. Given in alternate years. Prerequisite must include two of the following: Philosophy 401, 601, 602, 603, 623, 625. Mr. Leighton.

A systematic consideration of the nature of scientific method and the scientific conception of nature in its bearings on the problems of man.

662. Metaphysics of Personality and Values. Three credit hours. Winter Quarter. Given in alternate years. Prerequisite must include two of the following: Philosophy 401, 601, 602, 603, 623, 625. Philosophy 661 will ordinarily precede this course. Mr. Leighton.

A systematic consideration of the nature of the self and society, the problem of values, and the problem of the meaning of existence as a whole.

***665. Philosophy of History.** Three credit hours. Spring Quarter. Given in alternate years. Prerequisite must include ten hours in philosophy and ten hours in the social sciences. Mr. Leighton.

A discussion of the place of history in the system of human knowledge, the humanistic significance of the historical attitude, the concepts of civilization, culture, development, and progress. The aim of the course is to formulate a philosophy of culture.

Not open to students who have credit for Philosophy 820.

FOR GRADUATES

An undergraduate student shall not be permitted to take any course in the "800" group except by permission of the Graduate Council.

For description of graduate courses in this department see the Bulletin of the Graduate School.

PHONETICS (DIVISION)
Office, 324 Derby Hall

PROFESSOR RUSSELL, ASSISTANT PROFESSOR MASON

NOTE: Students from any department interested in either the research problems or numerous professions and fields concerned with speech and hearing in their varied ramifications are now permitted to major in phonetics and cover a comprehensive program dealing with speech as such, without following the vaguely related requirements in literature or optics, as heretofore required. Such students would do well to consult, at their earliest convenience, with the director of the phonetics laboratories, possible professors in courses likely to interest them, and chairmen or advisers of the various allied departments.

Clinic. The free speech, voice, and hearing clinic is designed to aid all teachers in avoiding class failures wherever they desire to refer students and is open to all citizens of the state. Those wishing information about the clinic should report to Room 324, Derby Hall, or telephone UN-3148; Campus 324.

* Not given in 1935-1936.

401. Elements of Speech. Five credit hours. One Quarter. Autumn, Winter, Spring. Miss Mason, Mr. Russell.

An introductory course in the elements of speech; study of dictionary pronunciation, correct and incorrect norms; training in the perception of speech differences and the use of the phonetic alphabet.

403. General Phonetics: Physiological. Five credit hours. Autumn Quarter. Five recitations each week. Prerequisite, Phonetics 401. Miss Mason.

X-ray fluoroscopic, and moving picture records and analyses of the physiological positions and movements involved in the production of English speech sounds (vowels and consonants) with special emphasis upon the coordination of these movements in current speech. Accent, rhythm, sound changes, and English speech-melody patterns. Training in the recognition and interpretation of the same.

407. General Phonetics: Practical. Five credit hours. Winter Quarter. Five recitations each week. Prerequisite, Phonetics 401. Mr. Russell, Miss Mason.

Training in the production of speech sounds. Fundamental principles involved in the mastery of strange sounds, and unpracticed pronunciation habits. Special attention to longer connected units in discourse and reading. Laboratory practice.

413. English Diction and Voice Hygiene. Five credit hours. Spring Quarter. Five recitations each week. Prerequisite, Phonetics 401. Mr. Russell, Miss Mason.

Laboratory and class practice.

FOR ADVANCED UNDERGRADUATES AND GRADUATES

According to the University regulations, courses in this group are not open to Freshmen or Sophomores.

604. Clinical Practice in Speech Correction. Five credit hours. Autumn Quarter. Prerequisite, ten Quarter hours in phonetics and ten Quarter hours in psychology. Mr. Russell.

Actual clinical practice in speech correction and training of visual hearing. The student will be given opportunity to study and work with a wide range of speech and hearing cases at the Children's Hospital, in the University Clinic, the Freshman Week Health Line. To make arrangements he should therefore, if possible, communicate with the Department well before the opening of the Quarter.

605. Standard American Pronunciation. Five credit hours. Winter Quarter. Prerequisite, ten hours in phonetics, Public Speaking 401, and English 528 or equivalents. Mr. Russell.

Norms of cultured speech, deviations therefrom, and their historical origin.

606. Lip-reading Techniques. Five credit hours. Spring Quarter. Prerequisite, fifteen Quarter hours in phonetics and ten hours in English or public speaking. Miss Mason.

700. Minor Research: Human Speech. Three to five credit hours. One Quarter. Autumn, Winter, Spring. Conference, library and laboratory work. Prerequisite, satisfactory courses in the field of the problem undertaken. A student may repeat this course and spend such time as the problem calls for during any Quarter. Mr. Russell.

This course is designed to permit any properly qualified person to avail himself of the library and laboratory facilities of the university for carrying out a minor or preliminary investigation, or for adding to his knowledge and technique in any phase of the study of human speech and sound as related thereto, or of the mechanism involved in its production, or of its known defects and their correction.

FOR GRADUATES

An undergraduate student shall not be permitted to take any course in the "800" group except by permission of the Graduate Council.

For description of graduate courses in this department see the Bulletin of the Graduate School.

PHYSICAL EDUCATION

MEN'S DIVISION

PROFESSORS ST. JOHN, CASTLEMAN, OBERTEUFFER, AND SCHMIDT, ASSOCIATE PROFESSORS METCALF, HINDMAN, AND WOOD, ASSISTANT PROFESSORS COBB, OLSEN, DUFFEE, GODFREY, SNYDER, AND STALEY, MR. PEPPE, MR. STAHL, MR. LARKINS, MR. RIEBEL

WOMEN'S DIVISION

PROFESSOR ARMSTRONG, ASSOCIATE PROFESSORS PALMER AND HERSEY, ASSISTANT PROFESSORS WINNEMORE, SUMPTION, GILMAN, AND WATERMAN, MISS WATSON, MISS STEIN, MISS SAUTHOFF, MISS SCHUTZ

Students who wish to carry additional courses in this Department are reminded that the College of Arts and Sciences permits thirty hours of work to be carried in courses offered in the Bulletins of other Colleges. See Bulletin of the College of Education for further courses in this Department.

400. Hygiene (Men and Women). One credit hour. One Quarter. Autumn, Winter, Spring. One lecture each week. Required of every Freshman during the first year of residence in the University. Sections for men, all instructors; sections for women, Miss Armstrong, Miss Winnemore.

This course deals with the various factors and conditions which affect the health and efficiency of the student.

401. Physical Education (Men). One credit hour. Autumn Quarter. Two hours each week. Required of every Freshman. All instructors.

The work in this course is based on a thorough physical examination given at the beginning of the entering Quarter.

The course includes general body-building exercises, gymnastic and athletic games, antagonistic sports, and swimming, with advanced elective activities for the physically superior groups.

402. Physical Education (Men). One credit hour. Winter Quarter. Two hours each week. Required of every Freshman. All instructors.

A continuation of Physical Education 401.

403. Physical Education (Men). One credit hour. Spring Quarter. Two hours each week. Required of every Freshman. All instructors.

A continuation of Physical Education 402.

421. Physical Education (Women). One credit hour. Autumn Quarter. Two hours each week. Required of every Freshman. All instructors.

The work includes hockey, soccer, volley ball, swimming, interpretative dancing, golf, horseback riding, and individual gymnastics.

422. Physical Education (Women). One credit hour. Winter Quarter. Two hours each week. Required of every Freshman. All instructors.

This work includes indoor baseball, basketball, golf, interpretative dancing, folk dancing, swimming, and individual work.

423. Physical Education (Women). One credit hour. Spring Quarter. Two hours each week. Required of every Freshman. All instructors.

This work includes horseback riding, golf, baseball, tennis, archery, swimming, and interpretative dancing.

425. Physical Education (Women). One credit hour. Autumn Quarter. Three hours each week. Required of all Sophomores. All instructors.

A continuation of Physical Education 421, 422, and 423.

426. Physical Education (Women). One credit hour. Winter Quarter. Three hours each week. Required of all Sophomores. All instructors.

A continuation of Physical Education 425.

427. Physical Education (Women). One credit hour. Spring Quarter. Three hours each week. Required of all Sophomores. All instructors.

A continuation of Physical Education 426.

ELECTIVE COURSES FOR MEN DISQUALIFIED FOR MILITARY SCIENCE

525. Physical Education. One credit hour. Autumn Quarter. Three hours each week. Open to Freshmen disqualified for elementary courses in Military Science. All instructors.

This course is similar in content to Physical Education 401.

526. Physical Education. One credit hour. Winter Quarter. Three hours each week. Open to Freshmen disqualified for elementary courses in Military Science. All instructors.

This course is similar in content to Physical Education 402.

527. Physical Education. One credit hour. Spring Quarter. Three hours each week. Open to Freshmen disqualified for elementary courses in Military Science. All instructors.

This course is similar in content to Physical Education 403.

528. Physical Education. One credit hour. Autumn Quarter. Three hours each week. Open to Sophomores disqualified for elementary courses in Military Science. All instructors.

This course offers advanced training and instruction in various athletic sports.

529. Physical Education. One credit hour. Winter Quarter. Three hours each week. Open to Sophomores disqualified for elementary courses in Military Science. All instructors.

This course offers advanced training and instruction in various athletic sports.

530. Physical Education. One credit hour. Spring Quarter. Three hours each week. Open to Sophomores disqualified for elementary courses in Military Science. All instructors.

This course offers advanced training and instruction in various athletic sports.

PHYSICS AND ASTRONOMY

PHYSICS

Office, 107 Mendenhall Laboratory

PROFESSORS ALPHEUS W. SMITH, BLAKE, AND LANDE, ASSOCIATE PROFESSORS ALVA W. SMITH AND THOMAS, ASSISTANT PROFESSORS HEIL, ZUMSTEIN, GREEN, KNAUSS, POOL, BENNETT, NIELSEN, HESTHAL, AND SHORTLEY, AND ASSISTANTS

(a) Students desiring a survey in physics and astronomy as part of a liberal education should register for Astronomy 431, 432 and 433. The distinction between physics and astronomy is not recognized in these courses. There is rather an attempt to unify these sciences.

(b) Physics 411, 412, and 413 give a survey of the field of physics with considerable emphasis on recent developments in the electron theory of matter.

(c) Physics 431, 432, and 433 also constitute a general course in physics, covering the subject more thoroughly than Physics 411-412-413. Somewhat more advanced textbooks are used in these courses. These are the courses regularly given to engineering students.

(d) Pre-medical, pre-dental, and applied optics students must take Physics 411-412-413.

(e) Physics 501, 502, 503 are a series of courses in elementary physical and geometrical optics. Although intended primarily for students of Applied Optics, these courses should be elected by undergraduates whenever training in geometrical and physical optics in excess of that represented by a general course in physics is desired.

411. General Physics: Mechanics, Wave Motion, and Sound. Five credit hours. One Quarter. Autumn and Winter. Four lectures and recitations and one two-hour laboratory period each week. Required in pre-medical and pre-dental courses, second year. Elective in other courses. Prerequisite, two entrance units in mathematics. Mr. Alpheus Smith, Mr. Alva Smith, Mr. Green, Mr. Knauss.

Not open to students who have credit for Physics 401 or 403.

412. General Physics: Heat, Light, Spectroscopy. Five credit hours. Winter Quarter. Four lectures and recitations and one two-hour laboratory period each week. Required in pre-medical and pre-dental courses, second year.

Elective in other courses. Prerequisite, Physics 411. Mr. Alpheus Smith, Mr. Alva Smith, Mr. Green, Mr. Knauss.

Not open to students who have credit for Physics 402 or 404.

413. General Physics: Magnetism, Electricity, and Electronics. Five credit hours. Spring Quarter. Four lectures and recitations and one two-hour laboratory period each week. Required in pre-medical course, second year. Elective in other courses. Prerequisite, Physics 411. Mr. Alpheus Smith, Mr. Alva Smith, Mr. Green, Mr. Knauss.

431. General Physics for Engineers: Mechanics. Five credit hours. One Quarter. Autumn and Winter. Four lectures and recitations and one two-hour laboratory period each week. Prerequisite, one entrance unit in physics and Mathematics 433. Mr. Blake, Mr. Zumstein, Mr. Bennett, Mr. Pool, Mr. Hesthal, Mr. Nielsen, Mr. Shortley.

Not open to students who have credit for Physics 403.

432. General Physics for Engineers: Heat, Sound, and Light. Five credit hours. One Quarter. Winter and Spring. Four lectures and recitations and one two-hour laboratory period each week. Prerequisite, Physics 431. Mr. Blake, Mr. Zumstein, Mr. Pool, Mr. Hesthal, Mr. Nielsen, Mr. Shortley.

Not open to students who have credit for Physics 404.

433. General Physics for Engineers: Electricity and Magnetism. Five credit hours. One Quarter. Autumn and Spring. Four lectures and recitations and one two-hour laboratory period each week. Prerequisite, Physics 431. Mr. Alpheus Smith, Mr. Blake, Mr. Zumstein, Mr. Bennett, Mr. Pool, Mr. Hesthal, Mr. Nielsen, Mr. Shortley.

435. Electricity and Magnetism. Three credit hours. Autumn Quarter. Three lectures and recitations each week. Concurrent, Physics 431. Mr. Heil, Mr. Zumstein, Mr. Green.

436. Electricity and Magnetism. Five credit hours. Winter Quarter. Three lectures and recitations and two two-hour laboratory periods each week. Prerequisite, Physics 431 and 435. Mr. Heil, Mr. Alva Smith, Mr. Zumstein.

437. Electrical Measurements and Photometry. Five credit hours. Spring Quarter. Two lectures and recitations and two three-hour laboratory periods each week. Prerequisite, Physics 436. Mr. Heil, Mr. Alva Smith, Mr. Zumstein.

NOTE: Physics 435, 436, and 437 may be taken in place of 433 giving such a course in electricity and magnetism as is provided for electrical engineers.

501. Geometrical and Physical Optics. Five credit hours. Autumn Quarter. Three lectures and recitations and two two-hour laboratory periods each week. Prerequisite, Physics 411-412-413 and Mathematics 421-422. Mr. Pool.

This course treats of the fundamental principles and methods of geometrical optics, with special reference to refractive indices, prisms, thin lenses, cylindrical lenses, combinations of thin lenses and thin lens systems, etc.

502. Geometrical and Physical Optics. Five credit hours. Winter Quarter. Three lectures and recitations and two two-hour laboratory periods each week. Prerequisite, Physics 501. Mr. Pool.

A continuation of Physics 501. It treats of thick lenses, combinations of lenses and mirrors, optical instruments used in conjunction with the eye, magnifying power, chromatic and spherical aberration, diffraction, interference, etc.

503. Geometrical and Physical Optics. Five credit hours. Spring Quarter. Three lectures and recitations and two two-hour laboratory periods each week. Prerequisite, Physics 502. Mr. Pool.

A continuation of Physics 502. It treats of optical instruments, spectroscopy, photometry and illumination, double refraction, polarization, absorption of light, color vision, etc.

509. Introduction to Contemporary Physics. Five credit hours. Autumn Quarter. Five lectures and recitations each week. Prerequisite, three Quarters of college physics. Mr. Hesthal.

This course is designed to give some idea of "the new physics." The following topics are treated, among others: cathode rays, ionization, electrons, mass and charge of the electron, X-rays, radioactivity, disintegration of atoms, positive rays, protons, atomic nuclei, atomic numbers, isotropes, spectra of hydrogen and ionized helium, series in other spectra, Bohr's theory of atom structure, X-ray analysis by crystals, crystal structure.

Not open to students who have credit for Physics 409.

FOR ADVANCED UNDERGRADUATES AND GRADUATES

According to the University regulations, courses in this group are not open to Freshmen or Sophomores.

607. Physical Optics. Four credit hours. Winter Quarter. Four lectures and recitations each week. Prerequisite, Mathematics 443 and three Quarters of college physics. Mr. Zumstein.

Lenses; systems of lenses; defects of images and their correction; diffraction; interference; polarization; optical rotation; dispersion and anomalous dispersion; optical instruments such as plane grating, concave grating; prism spectroscopes for visible, ultra-violet, and infra-red; interferometers; spectrophotometers and microphotometers.

608. Advanced Electricity. Four credit hours. Autumn Quarter. Four lectures and recitations each week. Prerequisite, Mathematics 443 and three Quarters of college physics. Mr. Bennett.

An introductory course in the mathematical theory of electricity and magnetism.

609. Molecular Physics and Heat. Four credit hours. Autumn Quarter. Four lectures and recitations each week. Prerequisite, Mathematics 443 and three Quarters of college physics. Mr. Shortley.

A study of the kinetic theory of gases and related topics.

610. Conduction of Electricity through Gases and Radioactivity. Four credit hours. Winter Quarter. Four lectures and recitations each week. Prerequisite, Mathematics 443 and three Quarters of college physics or equivalent. Mr. Heil.

An introductory course on the passage of electricity through gases and evacuated tubes, ionic velocities, photo-electricity, cathode rays and positive rays, radioactivity, elementary introduction to electron theory of matter, etc.

611. Modern Spectroscopy. Four credit hours. Spring Quarter. Four lectures and recitations each week. Prerequisite, Mathematics 443 and three Quarters of college physics. Mr. Hesthal.

A discussion of recent progress in spectroscopy, covering the following topics: series lines in spectra; Ritz principle of combination; Bohr's explanation; neutral and ionized states; ionization potential; types of series; electron orbits; generalization of Bohr's assumption; total and partial quantum numbers; Stark effect; intensity of lines; recent infra-red work; new work in ultra-violet; rest-strahlen and focal isolation; Zeeman effect; absorption spectra, "raies ultimes."

612. Periodic and Transient Electric Currents. Four credit hours. Spring Quarter. Three lectures and recitations and one two-hour laboratory period each week. Prerequisite, Mathematics 443 and three Quarters of college physics. Mr. Alva Smith.

Transient and stationary states in electrical circuits containing impulsive or periodic electromotive forces treated by the methods of differential equations and vector analysis; periodic and aperiodic currents in single circuits with resistance, inductance and capacity in series or parallel; coupled circuits; resonance phenomena; damped oscillations; theory of alternating current bridge measurements; pulsating currents; Fourier's analysis of periodic non-sinusoidal wave forms; electromagnetic radiation.

†615. Introduction to Nuclear Physics. Four credit hours. Four lectures and recitations each week. Prerequisite, calculus and one year of college physics. Mr. Pool.

Review of recent experimental methods and data on transmutation of the elements by bombardment with protons, deutons, neutrons, and alpha rays; artificial radioactivity; detection of nuclear disintegration products.

† Not given during the academic year, 1935-1936.

616. Advanced Physical Laboratory. Three to twenty-four credit hours. Any Quarter. Two three-hour laboratory periods each week. Prerequisite, one year of college physics. Mr. Heil.

This course is intended to give the advanced student in science practice in precise physical measurements, involving the use of high grade mechanical, optical, electrical, and thermal instruments.

The work undertaken will be elected from the following topics:

a. **Mechanics and Heat.** Exact measurements involving determinations of elasticities of solids, moments of inertia, torsional rigidity, torsional hysteresis "g" by physical pendulum, coefficients of viscosity, density of gases and vapors, hygrometry, specific heats, heat values of gases, thermo-electromotive forces, etc.

b. **Advanced Optical Measurements.** Exact determinations of indices of refraction by means of spectrometers, wave-lengths by means of ruled gratings and interferometers, dispersion, polarization, absorption, analysis of spectra, etc.

c. **Advanced Electrical Measurements.** Exact measurements of currents, resistances, electromotive forces, magnetic permeability, capacity and inductance; transient phenomena involving the determination of time constants of circuits; fundamental alternating current measurements; the use of the oscillograph in the study of alternating and transient currents.

d. **Advanced Measurements in Ionization and Radioactivity.** Use of electrometers and electroscopes for exact measurement of currents in gases, saturation currents, discharge of electricity and ionizing properties of radioactive materials, absorption of radiation; ionizing properties of flames and incandescent solids; characteristic curves of two and three electrode tubes and applications, photo-electricity, etc.

e. **Pyrometry and High Temperature Measurements.** Thermo-electric pyrometers, resistance thermometers, optical pyrometers, total radiation pyrometers, temperature recorders and controlling devices, transition points and thermal analysis at high temperatures.

f. **Acoustics.** Measurements on characteristics of speech sounds, limits of audition, masking effect of different sounds, binaural beats, acuity of hearing, acoustic filters, reflection and absorption of sound, reverberations, resonance in tubes and pipes, velocity of sound in different media.

Any one of the above topics may be selected during any Quarter with the exception of topic (d) which is offered only during the Winter Quarter.

A student may repeat this course until he has obtained a maximum of twenty-four credit hours. Only three credit hours may be taken during any Quarter except during the Summer Quarter, when six credit hours may be obtained. A student may accumulate not more than six credit hours in any *one* of the above topics.

620. X-rays and Atomic Structure. Four credit hours. Autumn Quarter. Four lectures and recitations each week. Prerequisite, Mathematics 443 and three Quarters of college physics. Mr. Pool.

Production, measurement and effects of X-rays, including gamma rays; classical electron theory of the reflection, refraction, absorption and scattering of X-rays; quantum theory of the origin of X-ray spectra and structure of heavy atoms.

621. Acoustics. Four credit hours. Winter Quarter. Four lectures and recitations each week. Prerequisite, Mathematics 443 and three Quarters of college physics. Mr. Knauss.

A discussion of wave motion, forced vibrations; origin, propagation, velocity, interference, diffraction, resonance and energy relations of sound waves; vibration of strings and organ pipes; speech sounds; acoustics of buildings, etc.

622. Thermionics and High Vacuum Phenomena. Four credit hours. Spring Quarter. Four lectures and recitations each week. Prerequisite, Mathematics 443 and three Quarters of college physics. Mr. Heil.

An introductory course in physical theories of thermionic emission; the discharge of electricity from incandescent solids in gases and high vacua; the effect of space charge and electrode potentials on currents in vacuum tubes; the methods of production and measurement of high vacua; the application of thermionic devices to rectification of alternating currents and to the production and detection of oscillations; use of thermionic devices for measurement of very low pressures; the application of multiple electrode tubes to the study of radiation potentials and ionization potentials.

623-624-625. Introduction to Theoretical Physics. Three credit hours each Quarter. Autumn, Winter, Spring. Three lectures and recitations each week.

Prerequisite, Mathematics 601 and 611 and three Quarters of college physics or their equivalent. Mr. Thomas.

This course is an introductory mathematical survey of the field of theoretical physics with emphasis on the application of mathematical methods to the solution of physical problems. The content of the course is selected from the following topics: dynamics of a particle, dynamics of rigid and deformable bodies, hydrodynamics of perfect and elastic fluids, dynamical theory of gases, electrostatics and electromagnetics, transient and alternating currents, electromagnetic waves along wires and in free space.

630. Minor Problems in Physics. Three to fifteen credit hours. Any Quarter. Conference, library and laboratory work. General prerequisites must include satisfactory advanced courses in experimental and theoretical physics. All instructors.

This course is designed to permit any properly qualified student to avail himself of the library and laboratory facilities of the department for adding to his knowledge and techniques in some subject in physics, for repeating classical physical experiments, or for carrying out minor investigations. After consulting with the chairman of the department the student may elect to work on any of the following topics:

(a) Acoustics
(b) Chromatic photometry
(c) Electrical and magnetic measurements at different frequencies
(d) High vacuum phenomena and techniques
(e) Photoelectricity and thermionics
(f) Pyrometry
(g) Radioactivity and atomic disintegration
(h) Visible, ultra-violet, and infra-red spectroscopy
(i) X-rays and crystal structure

†640. Modern Views Concerning the Physical Universe. Three credit hours. This course cannot be counted toward a major in physics. Prerequisite, one year of college physics. Mr. Hesthal.

This course is intended primarily for teachers of physics and chemistry in the secondary schools. It presents in a simple, non-mathematical manner recent advances in physics and astronomy, with numerous illustrations and applications. The subject matter is organized in a way to give a comprehensive picture of the physical universe as revealed by modern physics and astronomy.

†641. Development of Classical and Modern Physics. Three credit hours. This course cannot be counted toward a major in physics. Prerequisite, one year of college physics. Mr. Hesthal.

This course is intended primarily for teachers of physics and chemistry in secondary schools. Its purpose is (1) to give a historical account of the development of physics and astronomy, (2) to discuss the factors which have given direction and impetus to this development, and (3) to interpret the educational, social, and economic results of the physical sciences.

654. X-rays and Crystal Structure. Three credit hours. Winter Quarter. Three lectures and recitations each week. Prerequisite, calculus and one year of college physics. Given in alternate years. Mr. Blake, Mr. McCaughey, Mr. Mack, Mr. Harris.

This course is designed for those students of physics, chemistry and mineralogy who intend to do research work in crystal structures and X-ray analysis.

This course is the same as Mineralogy 654 and Chemistry 654.

Not open to students who have credit for Physics 814.

FOR GRADUATES

An undergraduate student shall not be permitted to take any course in the "800" or "900" groups except by permission of the Graduate Council.

For description of graduate courses in this department see the Bulletin of the Graduate School.

† Not given during the academic year, 1935-1936.

ASTRONOMY
Office, Emerson McMillin Observatory

PROFESSOR MANSON

(a) Astronomy 431, 432, and 433 give a descriptive survey of the physical universe as revealed by physics and astronomy. These courses are not intended for students who desire to major either in physics or in astronomy.

(b) Astronomy 500 is designed primarily for students who desire to obtain some knowledge of astronomy but have only a brief time to devote to the subject.

431. Nature of the Physical Universe. Five credit hours. Autumn Quarter. Three lecture and recitation periods and two one-hour observation and discussion periods each week. There will also be a few occasions when students will be expected to be at the Observatory during part of the evening for additional observations. Mr. Alpheus W. Smith, Mr. Manson, Mr. Hesthal.

This course entirely ignores any distinction between modern physics and astronomy and selects its subject matter from both of these sciences in such a way as to give an elementary but comprehensive picture of the physical universe. Astronomical and cosmic phenomena are interpreted in terms of classical principles of physics, molecular and electronic theories of matter and the quantum theory of radiation. The course is designed for students interested in astronomy and physics as part of a liberal education without thought of specialization in either of these subjects.

432. Nature of the Physical Universe. Five credit hours. Winter Quarter. Three lecture and recitation periods and two one-hour observation and discussion periods each week. There will also be a few occasions when students will be expected to be at the Observatory during part of the evening for additional observations. Mr. Alpheus W. Smith, Mr. Manson, Mr. Hesthal.

A continuation of Astronomy 431 but it is not necessary that Astronomy 431 precede this course.

433. Nature of the Physical Universe. Five credit hours. Spring Quarter. Three lecture and recitation periods and two one-hour observation and discussion periods each week. There will also be a few occasions when students will be expected to be at the Observatory during a part of the evening for additional observations. Prerequisite, Astronomy 431 or 432. Mr. Alpheus W. Smith, Mr. Manson, Mr. Hesthal.

A continuation of Astronomy 431 and 432.

500. Descriptive Astronomy. Five credit hours. One Quarter. Autumn and Spring. Five lectures and recitations each week. Mr. Manson.

This course is designed for students who wish to obtain some knowledge of astronomy but have time for only one Quarter's work in the subject. The chief emphasis will be placed on its descriptive and historical aspects. Students will have opportunity for observations with the telescope and other astronomical equipment.

501. Physical and Practical Astronomy. Five credit hours. Winter Quarter. Five lectures and recitations each week. Prerequisite, one year of college physics. Mr. Manson.

A course dealing with the fundamental facts, principles and methods of astronomy. Such topics will be discussed as astronomical instruments; determination of latitude and longitude; the motions of planets, comets and double stars; the masses of celestial bodies; the chemical composition of the atmosphere of the sun, stars and planets; solar and stellar temperatures.

Not open to students who have credit for Astronomy 420.

502. Stellar Astronomy. Five credit hours. Spring Quarter. The time is divided between lecture and laboratory periods as seems convenient. Prerequisite, one year of college physics. Mr. Manson.

This course treats of problems connected principally with bodies outside the solar system. Such problems as classification of stellar spectra; the determination of stellar distances by trigonometrical, spectroscopic and dynamical methods; the computation of temperatures; diameters and masses of stars; double stars; variable stars; the solar motion and star streaming; the structure, motions and distances of nebulae; galactic structure and rotation will be discussed.

Not open to students who have credit for Astronomy 509.

FOR ADVANCED UNDERGRADUATES AND GRADUATES

According to the University regulations, courses in this group are not open to Freshmen or Sophomores.

605. Introduction to Celestial Mechanics. Four credit hours. Winter Quarter. Four lecture and recitation periods each week. Prerequisite, Mathematics 443 and ten Quarter hours of astronomy or ten Quarter hours of college physics. Mr. Manson.

A discussion of rectilinear motion under the law of inverse squares and under the law of direct distance; central forces, including the character of the orbit under different laws of attraction; the potential and attraction of bodies; the problem of two bodies; including the computation of positions of planets and comets.

606. Introduction to Celestial Mechanics. Four credit hours. Spring Quarter. Four lecture and recitation periods each week. Prerequisite, Astronomy 605 or its equivalent. Mr. Manson.

A discussion of the determination of orbits of planets and comets; the general integrals of problems of "n" bodies and an introductory discussion of the problem of three bodies, lunar theory and perturbations.

611. Minor Problems in Astronomy. Three to nine credit hours. Autumn, Winter, and Spring Quarters. Conferences, library and laboratory work. Prerequisite, Astronomy 502. A student may repeat this course until he has earned a total of nine credit hours but not more than three credit hours may be taken in one Quarter. Mr. Manson.

This course is designed to permit properly qualified students to avail themselves of the facilities of the Observatory to work independently on a special problem in practical astronomy, to develop the necessary techniques for the successful use of astronomical instruments and to get some acquaintance with the methods of astronomical research. Each problem must be selected after consultation with the instructor in charge of the course.

FOR GRADUATES

An undergraduate student shall not be permitted to take any course in the "900" group except by permission of the Graduate Council.

For description of graduate course in this department see the Bulletin of the Graduate School.

PHYSIOLOGICAL CHEMISTRY, PHARMACOLOGY, AND MATERIA MEDICA

Office, Hamilton Hall

PROFESSOR SMITH. ASSOCIATE PROFESSOR BROWN, ASSISTANT PROFESSOR WIKOFF, MR. BOSWORTH, AND ASSISTANTS

Students who wish to carry additional courses in this department are reminded that the College of Arts and Sciences permits thirty hours of work to be carried in courses offered in the Bulletins of other Colleges. See Bulletin of the Graduate School for further courses in this department.

FOR ADVANCED UNDERGRADUATES AND GRADUATES

According to the University regulations, courses in this group are not open to Freshmen or Sophomores.

611. Physiological Chemistry. Five credit hours. Autumn Quarter. Three lecture-quiz hours and six laboratory hours each week. Prerequisite, Chemistry 421, 422, 647, 648, 649, 650. Miss Wikoff.

The chemistry of carbohydrates, lipins, and proteins.

Not open to students who have credit for Physiological Chemistry 601. Not available for graduate credit for students majoring in Physiological Chemistry.

612. Physiological Chemistry. Five credit hours. Winter Quarter. Three lecture-quiz hours and six laboratory hours each week. Prerequisite, Physiological Chemistry 611. Miss Wikoff.

The chemistry of digestion, metabolism, and excretion.

Not open to students who have credit for Physiological Chemistry 602. Not available for graduate credit for students majoring in Physiological Chemistry.

613. Quantitative Methods of Blood Analysis. Three credit hours. Spring Quarter. One lecture and six laboratory hours each week. Elective. Prerequisite, Physiological Chemistry 612. Miss Wikoff.

Determination of important constituents of the blood.

Not open to students who have credit for Physiological Chemistry 603.

PHYSIOLOGY

Office, 209 Hamilton Hall

PROFESSORS HARTMAN, SEYMOUR, AND NICE, ASSOCIATE PROFESSOR E. P. DURRANT (EMERITUS), ASSISTANT PROFESSORS McPEEK, HITCHCOCK, AND HAMLIN, MR. R. R. DURANT, MR. ASHCRAFT, AND ASSISTANTS

Students desiring only an introductory approach to physiology should take Physiology 403, 404, and 505.

Students intending to major in physiology should take the following courses or their equivalents: Chemistry 401, 402, 403, 465, 647, 648, 649, and 650; Physiological Chemistry 611 and 612; Zoology 401 and 402; Anatomy 613, 618, and 619. Courses in general physics are desirable. A reading knowledge of French and German is recommended.

403. Elementary Physiology. Five credit hours. One Quarter. Autumn and Spring. Four lectures or recitations and three laboratory hours each week. Prerequisite, two Quarters of chemistry. Not open to Freshmen. Mr. Seymour and staff.

The fundamental principles governing the activity of living organisms, including the chemical and physical structure of animate matter; tissues; muscle-nerve physiology; blood and lymph; fundamental structure and functions of the nervous system, including reflex actions; cardiovascular system.

Not open to students who have credit for any course in physiology.

404. Elementary Physiology. Five credit hours. One Quarter. Autumn and Winter. Four lectures or recitations and three laboratory hours each week. Prerequisite, Physiology 403 or 407. Not open to Freshmen. Mr. Seymour and staff.

An elementary survey of respiration, foods, digestion, metabolism, excretion, endocrines, brain, and special senses.

Not open to students who have credit for Physiology 408 or 409.

505. Physiology of Reproduction. Five credit hours. Spring Quarter. Three lecture hours and six laboratory hours each week. Prerequisite, two Quarters of physiology with laboratory or equivalent biological training. (Intended for students who are not majoring in physiology.) Mr. Durant.

This course considers the fundamental phenomena of reproduction in both the simple and higher forms of living matter. It presents a brief survey of embryonic development, and a study of the mammalian gonads with particular emphasis on their hormonal relations. The laboratory work will be devoted to demonstrating the activities of the gonads and the resulting effects upon body processes.

Not open to students who have credit for Physiology 619.

FOR ADVANCED UNDERGRADUATES AND GRADUATES

According to the University regulations, courses in this group are not open to Freshmen or Sophomores.

601. Advanced Physiology. Five credit hours. Autumn Quarter. Three lectures and six laboratory hours each week. Prerequisite, Physiological Chemistry 611 and 612 or equivalent. Physiological Chemistry 611 may be taken concurrently. Department staff.

This course deals with body fluids, cardiovascular system and respiration.

602. Advanced Physiology. Five credit hours. Winter Quarter. Three lectures and six laboratory hours each week. Prerequisite, Physiology 601 or 615. Department staff.

A study of digestion, metabolism, excretion, reproduction, and endocrine system.

603. Advanced Physiology. Five credit hours. Spring Quarter. Three lectures and six laboratory hours each week. Prerequisite, Physiology 602 or 616. Department staff.

Neuromuscular systems and sense organs.

***618. Physiology of Metabolism.** Three or five credit hours. Autumn Quarter. Three lecture hours or three lecture hours and six laboratory hours each week. Prerequisite, Physiology 634-635-636 or 601-602-603. Mr. Hitchcock.

This course deals with both the theoretical and practical aspects of human metabolism as measured by determination of the respiratory exchanges. Some of the more important abnormal variations in the metabolic rate are considered. In the laboratory the student is familiarized with some of the simpler types of apparatus for measuring the metabolic rate.

620. Physiology of Exercise. Five credit hours. Spring Quarter. Three lectures and six laboratory hours each week. Prerequisite, two Quarters of physiology. Intended for students who are not majoring in physiology. Class limited to forty students. Mr. Hamlin.

This course deals with present conceptions of muscle physiology, the role of the nervous and endocrine systems in the control of muscular activity, the correlation of circulation, respiration and other body mechanisms with the intensity of muscular exercise—in brief, all those physico-chemical processes which make possible and occur as a result of muscular action.

623. General Physiology. Five credit hours. Autumn Quarter. Three lecture or quiz and six laboratory hours each week. Prerequisite, two Quarters of physiology or equivalent biological training, and acceptable courses in organic and physical chemistry. Mr. Hitchcock.

A study of the physio-chemical principles involved in life processes. The physiological significance of surface tension, diffusion, osmotic pressure, and the colloid state are studied. The fundamental nature of irritability and contractility is considered and a brief comparative study is made of the circulatory, respiratory, secretory, and digestive processes in lower and higher organisms.

625. Advanced Mammalian Physiology. Five credit hours. Winter Quarter. Two lectures and three three-hour laboratory periods each week. Prerequisite, Physiology 601, 602, 603. Mr. Durant and staff.

An advanced course in the physiology of the mammal, based largely on laboratory experiments.

630. Physiology of the Endocrines. Five credit hours. Spring Quarter. Four lectures and three laboratory hours each week. Prerequisite, Physiology 601, 602, 603, or equivalent. Mr. Hartman, Mr. Curtis, Mr. Durant, Mr. Knouff, Mr. Wiseman.

A study of the functions of the thyroid, parathyroid, thymus, pituitary, adrenal, pancreas, gonads, and other organs with possible endocrine function.

700. Minor Problems. Three to fifteen credit hours. Autumn, Winter, and Spring Quarters. Designed for qualified students who wish to begin research. Permission of department chairman required for registration. Department staff.

FOR GRADUATES

An undergraduate student shall not be permitted to take any course in the "800" group except by permission of the Graduate Council.

For description of graduate courses in this department see the Bulletin of the Graduate School.

POLITICAL ECONOMY

(See Economics and Sociology)

* Not given in 1935-1936.

POLITICAL SCIENCE
Office, 100 University Hall

PROFESSORS SPENCER, SHEPARD, ODEGARD, AND WALKER, ASSOCIATE PROFESSOR HELMS, ASSISTANT PROFESSOR AUMANN, MR. FOSTER, MR. HAMILTON, AND ASSISTANTS

If French units are presented for admission, German should be elected in college, and vice versa. A reading knowledge of both is desirable. History, both European and American, and Economics 401-402 are essential for work in Political Science, though they need not all precede the beginning of work in this subject.

In planning further work the student should seek the advice of members of the department, in order that advanced courses may be properly correlated as well as adapted to individual tastes and needs. In general the department advises students to include in their plans Mathematics 421-422, Philosophy 401, 402, 405, and 602; also courses in constitutional history, recent history, the history of parties, public finance, and literature.

***400. The Peace Movement.** Four credit hours. Winter Quarter. Four meetings each week. Required of students excused, for conscientious objection, from the courses in Military Science. Mr. Spencer.

An examination of the causes of war and the effort of the human race to bring law and organization into the relations of states to each other.

401. American National Government. Five credit hours. One Quarter. Autumn, Winter, Spring. It is strongly recommended that this course be preceded by two Quarters in college history; it must precede all other courses in this department. Not open to Freshmen except in third Quarter of a sequence. All instructors.

A general survey of the Constitution; the organization and functions of the national government; its relation to the states; political parties.

402. Government and Politics of Foreign Countries. Five credit hours. One Quarter. Autumn, Winter, Spring. Prerequisite, Political Science 401 or History 401-402 in sequence. All instructors.

A study of the governments of England, France, Germany, Switzerland, and other countries of chief interest. Special attention will be given to characteristic institutions, such as the English cabinet system, French administrative organization and justice, Swiss direct democracy; proportional representation; the problem of self-government and empire.

403. American State Government. Five credit hours. One Quarter. Autumn, Winter, Spring. Prerequisite, Political Science 401, and (except by special permission) 402. All instructors.

A general survey of the structure and functions of government in the American commonwealths.

FOR ADVANCED UNDERGRADUATES AND GRADUATES

According to the University regulations, courses in this group are not open to Freshmen or Sophomores.

605. Principles of Public Administration I. Five credit hours. Autumn Quarter. Five meetings each week. Prerequisite, ten hours in political science. Mr. Walker.

A consideration of the general problems of public administration; relations between the administration and the other branches of government—executive, legislative, and judicial; the civil service; personnel administration; budgets and accounting; centralized purchasing.

606. Principles of Public Administration II. Five credit hours. Winter Quarter. Five meetings each week. Prerequisite, fifteen hours in political science. Mr. Walker.

An examination of the principles of public administration as applied to the rendering of service to the public by national, state and local governments. Attention will be paid to such functions as the protection of life and property, the promotion of trade and commerce, the regulation and operation of public utilities, city and metropolitan planning, and the furtherance of public welfare, noting in each case the part which is played by each of the levels of government.

* Not given in 1935-1936.

607. Municipal Government. Five credit hours. One Quarter. Winter and Spring. Five meetings each week. Prerequisite, Political Science 401 and 402. Mr. Helms.

A comparative study of modern municipalities in the United States and the principal countries of Europe; their social significance; their governmental structure; their relation to the state; the experience with government by council, mayor, commission, and manager; methods of popular participation.

***610. Problems of County and Rural Government.** Three credit hours. Autumn Quarter. Three meetings each week. Prerequisite, ten hours in political science. Mr. Walker.

A study of structure and functions of county government under both rural and urban conditions and an examination of problems of rural government.

***611. Introduction to Jurisprudence.** Five credit hours. Spring Quarter. Five meetings each week. Prerequisite, Political Science 401 and 402. Mr. Spencer.

An introductory study of legal concepts. An attempt is made both to give the prospective law student an analytical and historical guide into his subject, and to give those who do not intend to pursue the study of law an idea of its significance in social organization, and its relation to political and economic science.

612. International Law. Five credit hours. Winter Quarter. Five meetings each week. Prerequisite, Political Science 401 and 402. Mr. Spencer.

A study of the principles of international law in their growth and present status, with particular attention to unsettled points, and problems raised by the World War.

613. Contemporary International Politics. Five credit hours. Autumn Quarter. Five meetings each week. Prerequisite, Political Science 401 and 402. Mr. Helms.

Methods and ideals of diplomacy; current problems in international relations, such as the reorganization of Europe, Pan-Americanism, and the Far East; tendencies toward administrative, judicial, and legislative world-organization.

615. Administration of Justice. Three credit hours. Spring Quarter. Three meetings each week. Prerequisite, Political Science 401 and 402 or 403. Mr. Aumann.

A study of the nature, purposes, and limitations of law as administered through courts. The development, organization, and procedure of our judicial system. Recent trends in legal thinking.

616. American Constitutional Law. Three credit hours. Winter Quarter. Three meetings each week. Prerequisite, Political Science 401 and 402. Mr. Aumann.

A study of leading constitutional principles in the United States as interpreted by the courts. Special studies will be made of such topics as the following: the adoption and amendment of constitutions; the judicial power, citizenship; private rights; powers of Congress; war powers; police powers of the states: political privileges. Designed for students who desire a non-technical knowledge of the more important federal and state constitutional principles in the United States.

***617. Administrative Law.** Three credit hours. Spring Quarter. Three meetings each week. Prerequisite, Political Science 616. Mr. Odegard.

Administrative organization; procedure of administrative bodies; limits of administrative discretion; quasi-judicial and quasi-legislative powers of administrative bodies; relief against administrative action; conclusiveness of administrative findings. Cases and readings.

621. Ancient and Medieval Political Thought. Three credit hours. Autumn Quarter. Three meetings each week. Prerequisite, Political Science 401 and 402. Mr. Shepard.

The chief theories of European government from the time of Plato to the opening of the modern period. Political Science 621, 622, and 623 are intended to present consecutively the development of European political philosophy.

622. Modern Political Thought. Three credit hours. Winter Quarter. Three meetings each week. Prerequisite, Political Science 401 and 402. Mr. Shepard.

The chief theories of European and American government from the sixteenth century to the middle of the nineteenth century. This course is naturally preceded by Political Science 621, though the latter is not required, and is naturally followed by Political Science 623.

* Not given in 1935-1936.

623. Contemporary Political Thought. Three credit hours. Spring Quarter. Three meetings each week. Prerequisite, Political Science 401 and 402. Mr. Shepard.

An examination of the more important contemporary trends of political thought and of the theoretical problems of the nature of the state, of government, and of law.

626. Dictatorship and Absolutism. Three credit hours. Autumn Quarter. Three class meetings each week. Alternating with Political Science 611. Prerequisite, Political Science 401 and 402. Mr. Spencer.

An examination of certain governmental systems of today which are based on rejection of the ideal of democracy. Special attention given to Russia, Italy, and Germany, but consideration also of minor instances. Political and social causes of this contemporary tendency; administrative and constitutional problems.

631. Methods of Governmental Research. Three credit hours. Spring Quarter. Three meetings each week. Given in alternate years. Prerequisite, fifteen hours in political science. Mr. Walker.

The materials of political science; history of procedure in political science research; research technique; presentation of results of research.

633. Legislation. Three credit hours. Spring Quarter. Three meetings each week. Prerequisite, Political Science 403. Mr. Walker.

The process of law making in the United States, the constituent process, statute law making, legislative drafting, legislative procedure, judicial review, the common law, executive ordinances, popular law making.

634. Public Opinion and Political Processes. Five credit hours. Autumn Quarter. Five meetings each week. Prerequisite, Political Science 401 and 402 or 403. Mr. Odegard.

A study of the forces which mould the public mind, and of the channels through which public opinion is expressed, viz., the family, the school, the church, the movies, radio, press, pressure groups and propaganda.

Lectures and discussion.

635. Elections and Parties. Five credit hours. Winter Quarter. Five meetings each week. Prerequisite, Political Science 401 and 402 or 403. Mr. Odegard.

A study of voting qualifications, ballot forms, the direct-primary and other forms of nomination, systems of proportional representation, the organization and methods of political parties, and the position and function of the party system in democracies.

705-706-707. Honors Courses. Three to five credit hours. Autumn, Winter, and Spring Quarters. Informal conferences, the intent being to allow full scope to the initiative of the student. Prerequisite, Senior standing and forty hours of credit in the social sciences including fifteen hours in political science, with the record of "A" in at least half of the Political Science courses and an average of "B" in the remainder. At least two Quarters required of candidates for the degree of Bachelor of Arts with Distinction in Political Science (see page 34). All instructors.

A special topic is assigned to each student each Quarter, and results are tested by the requirement of theses and special examinations. Failure to receive a grade of "B" in this course is a disqualification for special honors.

FOR GRADUATES

An undergraduate student shall not be permitted to take any course in the "800" group except by permission of the Graduate Council.

For description of graduate courses in this department see the Bulletin of the Graduate School.

PSYCHOLOGY
Office, 325 Education Building

PROFESSORS ARPS, BURTT, GODDARD, MAXFIELD, PRESSEY, TOOPS, DOCKERAY, RENSHAW, ENGLISH, WILLIAMS, AND BERRY, ASSOCIATE PROFESSORS VALENTINE AND ROGERS, ASSISTANT PROFESSORS DUREA, EDGERTON, AND STOGDILL, MR. BAKER, MR. TROYER, AND ASSISTANTS

The courses offered in psychology fall into four general groups. The following approximate sequences are suggested for the guidance of students desiring a consistent program giving preparation in one of these fields. It is strongly urged, however, that students contemplating such work consult with the department as early as possible with reference to the arrangement of courses. This is particularly the case with graduate students. Thus in planning for a Doctor's degree a reading knowledge of French and German should be acquired during the undergraduate period.

I. General, Experimental and Comparative Psychology: 401-402, 601-602-603, 607, 608, 621, 626, 629, 630, 645, 646, 647, 650, 655, 656, 657.

II. Educational Psychology—preparation for psychological service to the schools: 401 and 407 (both required in the College of Education), 402, 608, 610, 662, 613, 615, 616, 611, 628, 631, 652, 650, 663, 676, 804.

III. Abnormal and Clinical Psychology: 401-402, 605, 606, 609, 611, 616, 617, 618, 619, 620, 621, 622, 631, 641, 642, 650, 801, 806, 808.

In this division will be found courses serving the following purposes:

(1) Extending the student's knowledge of another field of psychology.

(2) Acquainting him with an understanding of the possible derangements or disturbances of mental functions, and the means for correcting these in himself or in others.

(3) Fitting the student for service in one of the rapidly developing fields of mental hygiene as psycho-clinician, teacher, or director of clinics.

(4) A service clinic for the students of the University. Women may consult Mrs. Emily Leatherman Stogdill; men, Mr. M. A. Durea. Room 303, Education Building.

IV. Industrial Psychology: 401-402, 409, 635, 608, 639, 637, 638, 650.

Students who wish to carry additional courses in this Department are reminded that the College of Arts and Sciences permits thirty hours of work to be carried in courses offered in the Bulletins of other Colleges. See Bulletin of the College of Education for further courses in this Department.

401. Elementary Psychology. Five credit hours. One Quarter. Autumn, Winter, Spring. Five lecture hours or three lecture hours and two two-hour laboratory periods each week. All instructors.

An introductory course and fundamental to all subsequent courses in the department. This course, together with Psychology 402, undertakes to present a survey of the whole field of human psychology. This includes a study of the experimental findings in infant behavior and the subsequent development of adult modes of response, such as emotion, attention, habit, thinking, and the nature and development of personality.

Students desiring the laboratory should indicate that preference and arrange their schedule so that two consecutive hours are available. (See Time Schedule.) In the laboratory sections the student will be given the opportunity to perform experiments directly related to the material presented in the lecture sections.

402. Elementary Psychology. Five credit hours. One Quarter. Autumn, Winter, Spring. Five lecture hours or three lecture hours and two two-hour laboratory periods each week. All instructors.

A continuation of Psychology 401. Students desiring the laboratory should indicate that preference and arrange their schedule so that two consecutive hours are available. (See Time Schedule.) In the laboratory sections the student will be given the opportunity to perform experiments directly related to the material presented in the lecture sections.

408. Mental Hygiene. Three credit hours. One Quarter. Autumn and Winter. Three class meetings each week. Prerequisite, Psychology 407 or 402. Mrs. Stogdill.

A general survey of the principles of mental hygiene. A study of social and emotional adjustment and personality in the light of the principles of mental hygiene.

409. Introduction to Applied Psychology. Three credit hours. Spring Quarter. Three lectures each week. Prerequisite, Psychology 402. Mr. Burtt.

A systematic discussion of problems, methods, and typical results of psychology in the practice fields of medicine, law, education, and business.

411. Psychology of Effective Study and Individual Adjustment. Three credit hours. One Quarter. Autumn, Winter, Spring. Lectures, readings, reports, individual conferences. Registration by permission of the Secretary of the College, the Junior Dean, or the instructors. Mr. Pressey, Mrs. Stogdill.

The course will give attention to student problems of two kinds. The psychological principles of effective learning will be not only taught but demonstrated and applied under the supervision of the instructor. Students who feel themselves handicapped by poor habits of study are urged to enroll in this course.

The psychological problems involved in the transition from control by adults to self management will be considered. The resources of clinical psychology will be made available for the solution of difficulties of individual adjustment.

FOR ADVANCED UNDERGRADUATES AND GRADUATES

According to the University regulations, courses in this group are not open to Freshmen or Sophomores.

601. Experimental Psychology. Three credit hours. Autumn Quarter. One lecture and two laboratory periods each week. Prerequisite, Psychology 402. Mr. Renshaw.

The laboratory course in experimental psychology for advanced undergraduate and graduate students. The experiments are selected both for general cultural value and for preparation for technical research in experimental psychology.

Courses 601, 602, 603 comprise a unit year's work. Students may enter any Quarter.

602. Experimental Psychology. Three credit hours. Winter Quarter. One lecture and two laboratory periods each week. Mr. Renshaw.

603. Experimental Psychology. Three credit hours. Spring Quarter. One lecture and two laboratory periods each week. Mr. Renshaw.

605. Physiological Psychology. Three credit hours. Autumn Quarter. Three lectures each week. Prerequisite, Psychology 401-402. Mr. Goddard.

The aim of this course is to give a consistent picture of the physical basis of mind. It uses the important facts of the anatomy and physiology of the central and autonomic nervous systems and the more generally accepted theories of nerve functions and their correlations with mental processes.

606. Advanced Physiological Psychology. Three credit hours. Winter Quarter. Three lectures each week. Prerequisite, Psychology 605 or permission of the instructor. Mr. Goddard.

This course will deal with the larger problems of the dependence of mental phenomena upon physiological processes such as: the emotions and the sympathetic system; temperament and the endocrines; consciousness and the circulation; nerve activity without consciousness; effect of unusual physiological conditions (e.g., produced by fatigue, alcohol, syphilis, or other toxins) upon various mental processes.

607. Genetic Psychology. Five credit hours. Spring Quarter. Five lecture hours each week. Lectures, recitations, and reports. Prerequisite, Psychology 401-402 or 407. Mr. Williams.

This course is designed to present the facts of mental development and their significance. Topics considered are: individual development, particularly with reference to the development of the nervous system; inheritance of mental traits; innate tendencies, their characteristics, description, and modification; play; mental states; their physiological basis and development with growth and training; moral and religious development; physical development.

608. Educational Statistics: Elementary. Four credit hours. Autumn Quarter. Two lectures and two two-hour laboratory periods each week. Mr. Toops, Mr. Edgerton.

A basic statistical course for students intending to conduct major or minor research. Frequency distributions, measures of central tendency and variability; construction of graphs and charts; interpretation of results in terms of probability; simple treatment of correlation. Extended practice in the use of calculating machine and computational devices.

609. The Exceptional Child. Three credit hours. One Quarter. Winter and Spring. Three lecture hours each week. Lectures, reports, clinics, and visits to public institutions. Prerequisite, fifteen hours of psychology or ten hours of psychology and five hours of professional educational subjects or sociology. Mr. Maxfield, Mr. Berry.

Individual differences among children with respect to mental, physical, and social traits. The social and pedagogical significance of talent and defect. Consideration of gifted children,

special abilities and disabilities, blindness, deafness, speech defect, mental retardation, and behavior problems. Emphasis will be placed on the psychology of the exceptional child as a foundation for educational classification and treatment.

610. Adolescence. Three credit hours. Autumn Quarter. Three lectures each week. Prerequisite, Psychology 407 or 402. Mr. English.

A study of the outstanding characteristics of the adolescent boy and girl; the educational and social problems arising at this period, and means for dealing with these problems.

611. The Mentally Deficient Child. Three credit hours. Autumn Quarter. Three lecture hours each week. Lectures, reports, clinics, and visits to public institutions. Prerequisite, fifteen hours of psychology or ten hours of psychology and five hours of professional educational subjects or sociology. Mr. Maxfield.

The varieties and grades of mental deficiency, including the backward child of the schools and the distinctly feeble-minded. Consideration of mental deficiency and defect for purposes of educational treatment and social disposition. The psychology of feeble-mindedness; types, degrees, causes and consequences.

616. Individual Testing by the Binet-Simon Method. Two credit hours. One Quarter. Autumn and Winter. Two laboratory periods each week. Reports, laboratory demonstrations, and individual testing. Prerequisite, fifteen hours of psychology or ten hours of psychology and five hours of professional educational subjects or sociology. Mr. Maxfield, Mr. Durea, and assistants.

Practice in the technique of the Stanford revision of the Binet-Simon scale for measuring intelligence. Brief historical and descriptive treatment of the Binet scale, followed by intensive training in its practical use.

617. Advanced Binet Testing. Two credit hours. One Quarter. Winter and Spring. Two laboratory periods each week. Reports, laboratory demonstrations, and individual testing. Prerequisite or concurrent, Psychology 616. Mr. Maxfield, Mr. Goddard, Mr. Durea, and assistants.

Advanced study and application of the Binet-Simon method. Review of revisions of the Binet-Simon scale. Intensive training in the practical use of the revisions by Kuhlmann, Herring, and Hayes.

618. Clinical Tests. Two credit hours. One Quarter. Autumn and Spring. Two laboratory periods each week. Laboratory demonstrations and individual testing. Prerequisite, fifteen hours of psychology. Mr. Maxfield, Mr. Goddard, Mr. Durea, and assistants.

Descriptive and practical laboratory study of standard diagnostic tests and techniques, particularly those known as performance tests.

619. Psychological Clinic. Two or four credit hours. One Quarter. Autumn, Winter, Spring. One four-hour laboratory period each week. Clinic practicum. Individual case studies, reports, case conferences, home visits, and clinical procedure. May be taken for one or two Quarters with a maximum credit of four hours. Prerequisite, Psychology 616 and 618; prerequisite or concurrent, Psychology 617, or permission of instructor. Mr. Goddard, Mr. Maxfield.

Theory and practice of clinical case study, including family history, personal history, school history and social history. Interpretation of reports of medical examiners, teachers, social agencies, etc., as well as interpretation of test results. Participation in the regular work of the Psychological Clinic conducted by the Department of Psychology. Training in the preparation of clinical reports.

NOTE: A student may profitably receive the special training which this course gives for a second Quarter. Repetition does not involve repetition of content but additional practice in clinical procedure.

620. Advanced Psychological Clinic. Two credit hours. One Quarter. Autumn, Winter, Spring. Assignments equivalent to two laboratory periods each week. Prerequisite, Psychology 619 or permission of instructor (students are advised to consult instructor before registering). May be taken for one or two Quarters with a maximum credit of four hours. Mr. Goddard, Mr. Maxfield, Mrs. Stogdill.

Students will engage in actual clinical service, under the supervision of the instructor. Cases will be studied in the psychological clinic and in the nearby public schools and institutions. Special training in the diagnosis of borderline, psychopathic, and doubtful cases. Case studies involving psycho-educational or behavior problems. Follow-up work on cases previously studied in

the clinic. Problems of educational and vocational guidance. Advanced training in the preparation of clinical reports. Students expecting to deal with problems of college personnel will be assigned to work in that field.

NOTE: A student may profitably receive the special training which this course gives for a second Quarter. Repetition does not involve repetition of content but additional practice in clinical procedure.

621. Social Psychology. Three credit hours. Winter Quarter. Three lecture hours each week. Prerequisite, Psychology 401-402 or 407. Mr. Arps.

The nature and variety of innate tendencies; the relation of these tendencies to acquired behavior and social control; the development of personality.

622. Psychology of the Delinquent Child. Three credit hours. Spring Quarter. Three lecture hours each week. Lectures, reports, and visits to the Bureau of Juvenile Research. Prerequisite, ten hours of psychology or permission of instructor. Mr. Goddard.

The meaning and significance of delinquency; its psychological basis; causes and prevention. The home and school as factors determining delinquent behavior. The significance of psychological findings for juvenile court procedure. Present-day methods of dealing with the problem.

***624. Psychology of Vision and Hearing.** Five credit hours. Spring Quarter. Five lectures each week. Given in alternate years. Prerequisite, Psychology 602 and Physics 402 or its equivalent. Qualified Juniors and Seniors in electrical engineering and architecture may be admitted by permission of the instructor. Mr. Williams.

Production, measurement, and control of photic stimuli and measurements of the variations in their effectiveness as determined by physical and physiological factors. The work will consist in part of lecture demonstrations and experiments, and in part of a critical study of the reports of original authors. Special attention will be given to the facts and hypotheses of color-vision and to visual problems in industry.

626. Problems in Learning and Thinking. Three credit hours. Winter Quarter. Three lecture and discussion hours each week. Prerequisite, Psychology 402 or its equivalent. Mr. Renshaw.

The development of the principles which underlie the acquired modifications of human behavior.

629. Advanced Psychology. Five credit hours. Autumn Quarter. Five lectures each week. Prerequisite, Psychology 401-402. Miss Rogers.

The purpose of this course is to give a larger background to the advanced student of psychology, with respect to other disciplines, especially the sciences, leading to a systematic development of the more complex experiences.

630. Psychology of Feeling and Emotion. Five credit hours. Spring Quarter. Five lectures each week. Prerequisite, Psychology 401-402. Miss Rogers.

A study of the various theories of feeling and emotion and the fundamental relations of emotion to instinct. Emotions in relation to various physiological activities. Methods of investigating emotion.

631. Psychological Theories of Ability. Three credit hours. Spring Quarter. Three lecture hours each week. Prerequisite, fifteen hours of psychology or ten hours of psychology and five hours of professional educational subjects. This course alternates with Psychology 676. Mr. English.

Critical consideration of naïve ideas about ability; faculty psychology. Influence of Darwinism on conception of intelligence. Early mental testing. Binet and his successors. Test results and theories of intelligence. Problems of special abilities and of mental types. Relation of measurement of ability to systematic psychology.

634. Criminal and Legal Psychology. Five credit hours. Winter Quarter. Five lectures each week. Prerequisite, Psychology 401-402. Mr. Burtt.

Psychological factors in the determination of reliability of testimony; the technique of detecting crime and falsehood; responsibility; the relation of crime to mental disease or defect; the prevention of crime through environmental factors and heredity.

635. Psychology of Advertising. Three credit hours. One Quarter. Autumn and Spring. Three lectures each week. Prerequisite, Psychology 401-402. Mr. Burtt.

The psychological principles involved in effective advertising, notably attention, memory and action, with the contributory factors of association, feeling, instinct, suggestion, and reasoning.

* Not given in 1935-1936.

637. Industrial Psychology. Three credit hours. Autumn Quarter. Three lectures each week. Prerequisite, Psychology 401-402. Mr. Burtt.

The application of psychology to problems of industrial learning, adjustment of technical to mental factors, monotony, fatigue, environmental conditions, industrial unrest, morale, and accidents.

638. Industrial and Vocational Psychology Laboratory. Three credit hours. Spring Quarter. Two three-hour laboratory periods each week. Prerequisite, permission of the instructor. Mr. Burtt.

Laboratory work in the application of psychology to industrial and vocational problems, with especial emphasis on the development of psychological techniques for hiring employees. Practice in the devising and standardizing of occupational tests; obtaining and evaluating production rating; correlation of ratings and tests; interpretation of results from the standpoint of vocational selection or guidance. A portion of the work of the course is frequently done in local business and industrial plants.

639. Psychology and Personnel. Three credit hours. Winter Quarter. Three lectures each week. Prerequisite, Psychology 401-402. Mr. Burtt.

The application of psychology to problems of personnel. Selection and placement of employees by tests of intelligence and special ability. Trade tests, job analysis, and rating scales.

641. Abnormal Psychology. Five credit hours. Winter Quarter. Five lectures each week. Lectures and reports. Prerequisite, Psychology 401-402. Mr. Goddard.

The abnormal mental phenomena—viz., disorders of perception, association, memory, affection, judgment, action, volition, and personality, with especial emphasis on their relation to the respective normal phenomena. The grouping of these disorders into the syndromes exhibited in the main types of insanity.

642. Psychopathology. Three credit hours. Spring Quarter. Three lectures each week. Lectures and reports. Prerequisite, Psychology 401-402. Mr. Goddard.

This course will deal with the unusual (so-called pathological) manifestations of mind. Beginning with the consideration of subconscious phenomena—sleep, dreams, hypnosis, automatic writing, etc., there will be discussed: phobias, suggestion, the psychological aspects of hysteria, and multiple personality, psychasthenia, neurasthenia, and other disorders of personality.

644. Human Motives and Incentives. Three credit hours. Spring Quarter. Three meetings each week. Lectures, recitations, and assigned readings. Prerequisite, Psychology 401-402 or 407. Mr. Toops.

The psychological bases of initiation and improvement of work. The role of instinct, habit, custom and tradition, rationalism and psychopathy in motivation. The incentive values of self-ratings, competition, punishment, and such rewards as money, bonuses, participation and promotion, in relation to the capacities of individuals.

645. History of Psychology. Five credit hours. Autumn Quarter. Five lectures each week. Prerequisite, sixteen hours in psychology. Mr. Williams.

The course aims to view modern psychological problems in the light of their historical antecedents. The development of various theories such as those of sensation, attention, space perception, and emotion will be traced from earliest times to the present. As far as possible assignments will involve reference to original sources.

646. Principles of Human Behavior. Three credit hours. Spring Quarter. Three lectures each week. Prerequisite, sixteen hours in psychology. Mr. Dockeray.

A study of the development of theories of human behavior and a consideration of the simplest assumptions necessary and sufficient to explain the facts of human behavior as dependent on social and biological conditions.

***647. Theoretical Psychology.** Three credit hours. Winter Quarter. Three lectures each week. Prerequisite, sixteen hours in psychology. Mr. Dockeray.

Lectures and assigned readings bearing on the evolution of psychological theory in its relation to the physical and the social sciences.

650. Minor Problems. One or more credit hours. All Quarters. Prerequisite, sixteen hours in psychology and the permission of the instructor. All instructors.

Investigation of minor problems in the various fields of psychology.

By permission of the chairman of the department and the Director of the Bureau of Educational Research, students enrolled in this course may obtain credit for research work done under the auspices of the Bureau staff.

* Not given in 1935-1936.

655. Comparative Psychology. Five credit hours. Autumn Quarter. Five lectures each week. Prerequisite, Psychology 401-402. Mr. Williams.

The principles of animal behavior in relation to human behavior. A study of the similarities and differences in the behavior of animals and of humans and the explanation of these similarities and differences, with special reference to those principles definitely involved in the organism's instinctive and acquired mode of adjusting to its environment.

Not open to students who have credit for Psychology 627.

656. Comparative Psychology. Three credit hours. Spring Quarter. Three lectures each week. Prerequisite, Psychology 655. Mr. Williams.

A continuation of Psychology 655. Devoted largely to contemporary literature in comparative psychology.

Not open to students who have credit for Psychology 627.

657. Comparative Psychology Laboratory. Three credit hours. Autumn Quarter. One lecture each week and laboratory periods to be arranged. Prerequisite, Psychology 401-402. Mr. Williams.

The methods and results of investigation of animal behavior in relation to human behavior.

660. Comparative Psychology Laboratory. Three credit hours. Spring Quarter. One lecture each week and laboratory periods to be arranged. Prerequisite, Psychology 657. Mr. Williams.

Continuation of Psychology 657.

662. The Pre-School Child. Three credit hours. Winter Quarter. Two lectures and one conference hour each week. Prerequisite, Psychology 407 or 402. Mr. Dockeray.

This course will present the elements of child nature, individual differences and fundamental appetites. The process of socialization will be considered in terms of the variety of situational settings impinging on the child. All of the content of the course will be concerned with the significance of early behavior patterns.

663. Psychology of the Elementary School Period. Five credit hours. Autumn Quarter. Four class meetings and one hour or more of observations or laboratory work each week. Required of students specializing in elementary education. Prerequisite, Psychology 407. Mr. English, Mr. Pressey.

The psychological development of the child from five to twelve years. Effects of the school and out-of-school activities on development. Analysis of significant psychological problems involved in curricular activities. Provision by school and other social agencies for the psychological needs of the child.

FOR GRADUATES

An undergraduate student shall not be permitted to take any course in the "800" group except by permission of the Graduate Council.

For description of graduate courses in this department see the Bulletin of the Graduate School.

RHETORIC AND ENGLISH LANGUAGE

(See English)

ROMANCE LANGUAGES AND LITERATURES

Office, 111 Derby Hall

PROFESSORS HENDRIX, MOORE, HAVENS, ROCKWOOD, AND MONROE, ASSOCIATE PROFESSORS ANIBAL, DEMOREST, AND SCHUTZ, ASSISTANT PROFESSORS HAMILTON, GUTIERREZ, AND FOURE, MRS. FOURE, MISS WALSH, MR. PRICE, MR. PALOMO, MR. BIEGHLER, MR. FITCH, MR. ROGERS, MR. CABARGA, MR. HOWELL, AND ASSISTANTS

French 401-402, 403-404 must precede all other courses in French.

The undergraduate courses offered in French and Spanish beginning with third-year collegiate work fall into two general groups. Students may emphasize one or both of these lines of study.

I. Literary—French 413-414, 601-602, 603, 605-606, 607-608, 609-610, 611-612; Spanish 413-414, 607-608, 609-610, 611, 614, 615-616, 626.

II. Linguistic—French 410, 413-414, 623-624, 627 or 632, 628, 629; Spanish 405, 413-414, 605-606, 617.

For students who enter with two years of high school French the following outline course is recommended. (However, see statement on Placement Tests, below.):

First Year: French 403-404.
Second Year: (1) French 413-414.
(2) French 410.
Third and Fourth Years: (1) French 601-602, 603, 605-606, 607-608, 609-610, 611-612.
(2) French 623-624, 627 or 632, 628, and 629.

For students who enter with two years of high school Spanish the following outline is recommended. (However, see statement on Placement Tests, below.):

First Year: Spanish 403-404.
Second Year: Spanish 413-414.
Third and Fourth Years: (1) Spanish 607-608, 609-610, 611, 614, 615-616, 626, 630.
(2) Spanish 405, 605-606, 617, and 620.

PLACEMENT TESTS

Placement Tests are required of all students who continue the study of French or Spanish in the University in courses 402, 403, or 404 after beginning such study elsewhere. The purpose of the tests is to place each student in the highest course which he is able to carry with a fair chance of success. In the Autumn Quarter the Placement Tests are given for freshmen during Freshman Week, and for others during the first week of recitations. In other Quarters the Placement Tests are given during the first week of recitations for all new students continuing the study of a language in this Department.

ADVANCED STANDING

Through the Office of the Entrance Board freshmen who have excess entrance credits are notified if they are eligible to examination for advanced standing in French or Spanish. This examination is given at the same time as the Placement Tests mentioned above.

THE FRENCH CLUB

The French Club is a student organization conducted by the department and is under the supervision of Mr. and Mrs. Fouré. Formal meetings are held fortnightly.

It has been the practice of the French Club to stage one or more French plays annually for the last twenty-five years.

THE SPANISH CLUBS

The Spanish Club is a student organization conducted by the department and is under the supervision of Mr. Gutierrez. The club presents one or two plays each year.

A Junior Spanish Club (La Tertulia) for more elementary students (those in Spanish 403-404) is under the direction of the department. As these students progress they become eligible to membership in The Spanish Club.

THE ITALIAN CLUB

The Italian Club is a student organization conducted by the department under the supervision of Mr. Moore. It is the aim of the Club to present a play each year. Formal meetings are held fortnightly.

FRENCH

401. Elementary French. Five credit hours. One Quarter. Autumn, Winter, Spring. Five recitations each week. Sections in this course are limited to twenty-five students. All instructors.

This course may not be taken simultaneously with Spanish 401-402 or Italian 401-402.

402. Elementary French (Continued). Five credit hours. One Quarter. Autumn, Winter, Spring. Five recitations each week. Prerequisite, French 401. Sections in this course are limited to twenty-five students. All instructors.

This course may not be taken simultaneously with Spanish 401-402 or Italian 401-402.

403. Intermediate French. Five credit hours. One Quarter. Autumn, Winter, Spring. Five recitations each week. Prerequisite, French 402 or equivalent. Sections in this course are limited to twenty-five students. All instructors.

404. Intermediate French (Continued). Five credit hours. One Quarter. Autumn, Winter, Spring. Five recitations each week. Prerequisite, French 403 or equivalent. Sections in this course are limited to twenty-five students. All instructors.

410. Elementary French Conversation and Composition. Five credit hours. One Quarter. Autumn, Winter, Spring. Five recitations each week. Prerequisite, French 404 with grade of "C" or better, and permission of the instructor. This course is conducted in French. Sections are limited to twenty students. Mr. Fouré, Mrs. Fouré.

413. Introduction to French Literature. Five credit hours. One Quarter. Autumn, Winter, Spring. Five recitations each week. Prerequisite, French 404 with grade not lower than "C."

Rapid reading of modern literature with special emphasis on the first half of the nineteenth century.

414. Introduction to French Literature. Five credit hours. One Quarter. Autumn, Winter, Spring. Five recitations each week. Prerequisite, French 413.

Rapid reading of modern literature with special emphasis on the last half of the nineteenth century.

FOR ADVANCED UNDERGRADUATES AND GRADUATES

According to the University regulations, courses in this group are not open to Freshmen or Sophomores.

Students intending to major in French in the College of Arts and Sciences are urged to elect the following courses outside the department: Latin 627, Philosophy 601-602, 603, Greek 701, History 624-625, English 605, Fine Arts 677.

600. French Literature of the Seventeenth Century, 1680-1715. Five credit hours. Spring Quarter. Four meetings each week, a fifth at the option of the instructor. Lectures, collateral reading, and reports. Prerequisite, French 413-414 or 415-416. Mr. Rockwood.

The close of the seventeenth century. The Quarrel of the Ancients and the Moderns. Selected works of LaFontaine, LaBruyere, Fenelon, Bossuet, and Fontenelle will be read.

601. French Literature of the Seventeenth Century, 1600-1660. Five credit hours. Winter Quarter. Four meetings each week, a fifth at the option of the instructor. Lectures, collateral reading, and reports. Prerequisite, French 413-414 or 415-416. Mr. Rockwood.

The pre-classic period: formation of the school of 1660. The Libertines, growth of French comedy and tragedy. The Précieuses, the French Academy will be discussed. Selected works of Malherbe, De Viau, Descartes, Balzac, and Corneille will be read.

602. French Literature of the Seventeenth Century, 1660-1680. Five credit hours. Autumn Quarter. Four meetings each week, a fifth at the option of the instructor. Lectures, collateral reading, and reports. Prerequisite, French 413-414 or 415-416. Mr. Rockwood.

The school of 1660. Selected works of Pascal, Molière, Boileau, Racine, La Rochefoucauld, Mme. de Sévigné, and Mme. de Lafayette will be read.

***603. French Literature of the First Half of the Nineteenth Century.** Five credit hours. Spring Quarter. Five recitations each week. Lectures, collateral reading and reports. Prerequisite, French 413-414 or 415-416, or equivalent. Mr. Havens.

French literature from 1800 to 1850. The development of romanticism in the novel, poetry, and the theatre.

***605. French Literature of the Fifteenth and Sixteenth Centuries.** Three credit hours. Autumn Quarter. Three lectures each week. Given biennially. Prerequisite, French 413-414 or 415-416, or equivalent. Mr. Moore.

Villon, Rabelais and contemporaries.

* Not given in 1935-1936.

***606. French Literature of the Sixteenth Century.** Three credit hours. Winter Quarter. Three recitations each week. Given biennially. Prerequisite, French 413-414 or 415-416. Mr. Moore.

Montaigne; the Pléiade.

607. French Literature of the Eighteenth Century, 1700-1750. Three credit hours. Autumn Quarter. Three lectures each week. Prerequisite, French 413-414 or 415-416. Mr. Havens.

Rapid reading, with lectures and reports. Fontenelle, Bayle, Crébillon, Voltaire, Montesquieu, Marivaux, and others.

608. French Literature of the Eighteenth Century, 1750-1789. Three credit hours. Winter Quarter. Three lectures each week. Prerequisite, French 413-414 or 415-416. Mr. Havens.

Rapid reading, with lectures and reports. Voltaire, Rousseau, Diderot, Beaumarchais, and others.

609. The French Novel to 1850. Three credit hours. Autumn Quarter. Three lectures each week. Given biennially, alternating with French 611-612. Prerequisite, French 413-414 or 415-416. Mr. Demorest.

Rapid survey of the French novel during the sixteenth, seventeenth, and eighteenth centuries and the first half of the nineteenth century. Mme. de Staël, Chateaubriand, George Sand, Hugo, and Balzac. Lectures, reports, and collateral reading.

610. The French Novel, 1850 to the Present Day. Three credit hours. Winter Quarter. Three lectures each week. Given biennially, alternating with French 611-612. Prerequisite, French 413-414 or 415-416. Mr. Havens.

Flaubert, Maupassant, Zola, Daudet, France, Bazin, Loti, and others. Lectures, reports, and collateral reading.

***611. The Comedy of Manners in the Nineteenth Century, 1800-1880.** Three credit hours. Autumn Quarter. Three lectures each week. Given in alternate years. Prerequisite, French 413-414 or 415-416. Mr. Rockwood.

La Pièce Bien Faite, La Pièce à Thèse, Picard, Scribe, Dumas fils, Augier, Sardou. Rapid reading with lectures and reports.

***612. The Comedy of Manners in the Nineteenth Century, 1880-1914.** Three credit hours. Winter Quarter. Three lectures each week. Given biennially, alternating with French 609-610. Prerequisite, French 413-414 or 415-416. Mr. Rockwood.

Le Théâtre Libre, Becque, Curel, Hervieu, Lavedan, Donnay, Bernstein, Bataille, Guitry. Rapid reading with lectures and reports.

623. Cours de Style. Three credit hours. One Quarter. Autumn and Spring. Three recitations each week. Prerequisite, French 410, a "600" course in French literature, and permission of the instructor. This course is conducted in French. It is limited to twenty students. Mr. Fouré.

624. Cours de Style (Continued). Three credit hours. Winter Quarter. Three recitations each week. Prerequisite, French 623, and permission of the instructor. This course is conducted in French. It is limited to twenty students. Mr. Fouré.

†627. French Phonetics. Three credit hours. One Quarter. Three meetings each week with laboratory practice. Prerequisite, six Quarters of collegiate French or the equivalent, with a grade not less than "C" and permission of the instructor. The class is limited to twelve.

The formation of French sounds. Lectures, with exercises in the use of the symbols of the International Phonetic Association. A systematic study of the rules of French pronunciation. Careful drill in the reading of French. Designed for advanced students who expect to teach French.

Not open to students who have credit for French 632.

* Not given in 1935-1936.

† Not given during the academic year, 1935-1936.

628. Modern French Syntax. Three credit hours. Spring Quarter. Prerequisite, six Quarters of collegiate French or the equivalent with a grade not less than "C." Mr. Moore.

A careful study of French grammar, with composition to illustrate. Designed for advanced students who expect to teach French.

629. History of the French Language. Three credit hours. Autumn Quarter. Three recitations each week. Prerequisite, at least one "600" course in French literature and at least one year of high school Latin. Mr. Schutz.

A rapid survey of the development of the French language with special reference to the social and cultural conditions involved.

†630. Contemporary France. Three credit hours. Prerequisite, the equivalent of four Quarters of French and permission of the instructor. The course is conducted in French. The class is limited to fifteen.

The principal object of the course is to increase the student's facility in understanding, speaking, and writing French, the material for discussion being chosen from the life and institutions of modern France.

632. French Phonetics and Diction. Five credit hours. One Quarter. Autumn and Winter. Five meetings each week with laboratory practice. Prerequisite, six Quarters of collegiate French or the equivalent, with a grade not less than "C" and permission of the instructor. The class is limited to twelve. Mrs. Fouré, Mr. Rockwood.

The formation of French sounds. Lectures, with exercises in the use of the symbols of the International Phonetic Association. A systematic study of the rules of French pronunciation and diction. Careful drill in the reading of French. Designed for advanced students who expect to teach French.

Not open to students who have credit for French 627.

640. France in Twentieth Century Literature. Three credit hours. Spring Quarter. Lectures, collateral readings, and reports. Prerequisite, French 413-414 or equivalent. Mr. Demorest.

Development in the novel, essay and poetry since 1900, and their relationships with French life. Estaunié, Roland, Proust, Gide, Barbusse, Duhamel, Maurois, Romains, Morand, Benoit, Colette, Claudel, Valery, and others. Regionalism, etc.

†650. French Poetry of the Nineteenth Century. Three credit hours. Lectures, collateral reading and reports. Prerequisite, French 413-414 or the equivalent.

French Romanticists, Parnassians, and Symbolists, Lamartine, Vigny, Hugo, Musset, Gautier, Baudelaire, Leconte de Lisle, Heredia, Verlaine, and others.

701. Minor Problems in French. Three to five credit hours. Autumn, Winter, and Spring Quarters. Prerequisite, at least junior standing with a 3.5 point average in French for the three Quarters last preceding and with the approval of the department. Professors and Associate Professors.

705-706-707. Honors Courses in French. Three to ten credit hours. Autumn, Winter, and Spring Quarters. Work in conference, library or phonetics laboratory. Prerequisite, senior standing, with the record of "A" in at least half of the French courses and an average of "B" in the remainder, and the approval of the department. Mr. Rockwood.

This course is intended to give undergraduates of special aptitude a greater opportunity to do independent study than is possible in the ordinary course.

ITALIAN

401. Elementary Italian. Five credit hours. Autumn Quarter. Five recitations each week. Mr. Moore.

Russo's Italian Grammar.

This course may not be taken simultaneously with French 401-402 or Spanish 401-402.

† Not given during the academic year, 1935-1936.

402. Elementary Italian (Continued). Five credit hours. Winter Quarter. Five recitations each week. Prerequisite, Italian 401. Mr. Moore.

Russo's Italian Grammar. Modern Italian prose.

This course may not be taken simultaneously with French 401-402 or Spanish 401-402.

FOR ADVANCED UNDERGRADUATES AND GRADUATES

According to the University regulations, courses in this group are not open to Freshmen or Sophomores.

601. Modern Italian Literature, 1800-1850. Five credit hours. Winter Quarter. Five recitations each week. Prerequisite, Italian 402. Mr. Moore.

Foscolo, Manzoni, Pellico, Leopardi.

602. Modern Italian Literature, 1851-1900. Five credit hours. Spring Quarter. Five recitations each week. Given in alternate years. Prerequisite, Italian 402. Mr. Moore.

Rovetta, Carducci, Giacosa, Fogazzaro.

***611. Dante's Life and Works.** Three credit hours. Winter Quarter. Three lectures each week. Given in alternate years. Prerequisite, Italian 602 or the permission of the instructor. Mr. Moore.

Reading of the Vita Nuova and The Inferno, Cantos 1-16.

SPANISH

401. Elementary Spanish. Five credit hours. One Quarter. Autumn, Winter, Spring. Five recitations each week. Sections in this course are limited to twenty-five students. All instructors.

The elements of Spanish grammar with abundant oral and written exercises. Especial attention to ear training and oral practice.

This course may not be taken simultaneously with French 401-402 or Italian 401-402.

402. Elementary Spanish (Continued). Five credit hours. One Quarter. Autumn, Winter, Spring. Five recitations each week. Sections in this course are limited to twenty-five students. All instructors.

The elements of Spanish grammar with abundant oral and written exercises. Especial attention to active vocabulary. Elementary reading based on Spanish geography, history, customs and manners.

This course may not be taken simultaneously with French 401-402 or Italian 401-402.

403. Intermediate Spanish. Five credit hours. One Quarter. Autumn, Winter, Spring. Five recitations each week. Prerequisite, Spanish 402 or an equivalent. Sections in this course are limited to twenty-five students. All instructors.

404. Intermediate Spanish (Continued). Five credit hours. One Quarter. Autumn, Winter, Spring. Five recitations each week. Prerequisite, Spanish 403 or an equivalent. Sections in this course are limited to twenty-five students. All instructors.

405. Commercial Spanish. Five credit hours. Winter Quarter. Five recitations each week. Prerequisite, Spanish 404 with grade not lower than "C." Mr. Gutierrez.

410. Elementary Spanish Composition. Five credit hours. Autumn Quarter. Five recitations each week. Prerequisite, Spanish 404 with grade not lower than "C." This course is conducted in Spanish. Sections limited to twenty students. Mr. Gutierrez.

* Not given in 1935-1936.

413. Introduction to Spanish Literature. Five credit hours. One Quarter. Autumn, Winter, Spring. Five recitations each week. Prerequisite, Spanish 404 with grade not lower than "C."

Rapid reading of modern novels and plays, with emphasis on the early period of the nineteenth century.

414. Introduction to Spanish Literature. Five credit hours. One Quarter. Autumn, Winter, Spring. Five recitations each week. Prerequisite, Spanish 413.

Rapid reading of novels and plays.

FOR ADVANCED UNDERGRADUATES AND GRADUATES

According to the University regulations, courses in this group are not open to Freshmen or Sophomores.

Students intending to major in Spanish in the College of Arts and Sciences are urged to elect the following courses outside of the department: Latin 627, Philosophy 601-602, 603, Greek 701, History 645-646, English 605.

***605. Advanced Composition and Conversation.** Three credit hours. Autumn Quarter. Three recitations each week. Given in alternate years. Prerequisite, Spanish 410 and a "600" course in Spanish literature. Mr. Gutierrez.

This course, conducted wholly in Spanish, is designed especially for prospective teachers and for persons desiring a practical command of the language. The subject matter will be for the most part the history, customs, and manners of Spain.

***606. Advanced Composition and Conversation (Continued).** Three credit hours. Winter Quarter. Three recitations each week. Given in alternate years. Prerequisite, Spanish 605. Mr. Gutierrez.

This course, conducted wholly in Spanish, is designed especially for prospective teachers and for persons desiring a practical command of the language. The subject matter will be for the most part the history, customs, and manners of Spain.

607. The Modern Spanish Novel. Five credit hours. Winter Quarter. Four meetings each week, a fifth at the option of the instructor. Given biennially, alternating with Spanish 609-610. Prerequisite, Spanish 413-414. Mr. Hendrix.

A careful study of the development of the modern Spanish novel, reading of representative authors. Lectures, collateral reading, and reports.

608. The Modern Spanish Novel (Continued). Five credit hours. Spring Quarter. Four meetings each week, a fifth at the option of the instructor. Given biennially, alternating with Spanish 609-610. Prerequisite, Spanish 413-414. Mr. Hendrix.

A careful study of the development of the modern Spanish novel, reading of representative authors. Lectures, collateral reading, and reports.

***609. Romantic Drama and Poetry of the Nineteenth Century.** Five credit hours. Autumn Quarter. Four meetings each week, a fifth at the option of the instructor. Given biennially, alternating with Spanish 607-608. Prerequisite, Spanish 413-414. Mr. Hendrix.

A survey of the movements in Spanish drama and poetry during the second half of the nineteenth century. Lectures, collateral reading, and reports.

***610. Modern Spanish Drama.** Five credit hours. Winter Quarter. Four meetings each week, a fifth at the option of the instructor. Given biennially, alternating with Spanish 607-608. Prerequisite, Spanish 413-414. Mr. Hendrix.

A survey of the movements in Spanish drama and poetry during the second half of the nineteenth century. Lectures, collateral reading, and reports.

611. Drama of the Golden Age. Five credit hours. Winter Quarter. Four meetings each week, a fifth at the option of the instructor. Given in alternate years. Prerequisite, Spanish 413-414. Mr. Anibal.

An intensive study of a limited number of plays of the representative dramatists. Lectures, collateral reading, discussion, and reports.

* Not given in 1935-1936.

†613. **The Picaresque Novel.** Five credit hours. Four meetings each week, a fifth at the option of the instructor. Prerequisite, Spanish 413-414.

An intensive study of Lazarillo de Tormes, Guzman de Alfarache, and El Buscon. Lectures, collateral readings, discussion and reports.

614. **Cervantes.** Five credit hours. Autumn Quarter. Four meetings each week, a fifth at the option of the instructor. Given in alternate years. Prerequisite, Spanish 413-414. Mr. Anibal.

A study of the works of Cervantes with special emphasis on the Quixote. Lectures, collateral reading, discussion, and reports.

*615. **Survey of Spanish Literature from the Earliest Times to the Seventeenth Century.** Five credit hours. Winter Quarter. Four meetings each week, a fifth at the option of the instructor. Given in alternate years. Prerequisite, Spanish 413-414. Mr. Anibal.

Lectures, collateral reading, discussion, and reports.

*616. **Survey of Spanish Literature of the Seventeenth and Eighteenth Centuries.** Five credit hours. Spring Quarter. Four meetings each week, a fifth at the option of the instructor. Given in alternate years. Prerequisite, Spanish 413-414. Mr. Anibal.

Lectures, collateral reading, discussion, and reports.

617. **Modern Spanish Syntax.** Three credit hours. Autumn Quarter. Three recitations each week. Prerequisite, Spanish 413-414 and the consent of the instructor. Mr. Anibal.

Study of syntax, designed for advanced students who expect to teach Spanish.

620. **Spanish Phonetics.** Five credit hours. Winter Quarter. Five recitations each week. Prerequisite, Spanish 413-414.

Careful and detailed study of special problems involved in teaching Spanish to English speaking students. Laboratory analysis of differences between English and Spanish pronunciation.

Not open to students who have credit for Phonetics 605.

*626. **The Spanish Drama of the Sixteenth Century.** Five credit hours. Spring Quarter. Four meetings each week, a fifth at the option of the instructor. Given biennially, alternating with Spanish 630. Prerequisite, Spanish 413-414. Mr. Anibal.

*630. **Survey of Spanish-American Literature.** Five credit hours. Spring Quarter. Four meetings each week, a fifth at the option of the instructor. Given biennially, alternating with Spanish 626. Prerequisite, Spanish 413-414. Mr. Hendrix.

A study of the masterpieces of Spanish-American literature. Lectures, collateral reading, discussion and reports.

†640. **Spain in Twentieth Century Literature.** Three credit hours. Lectures, collateral readings, and reports. Prerequisite, Spanish 413-414 or equivalent.

The Generation of 1898, including essayists and others who contributed to the Revolution of 1931.

†641. **Spain in Twentieth Century Literature (Continued).** Three credit hours. Lectures, collateral readings, and reports. Prerequisite, Spanish 413-414 or equivalent.

The Generation of 1898, including essayists and others who contributed to the Revolution of 1931.

†660. **The Comedia of Lope de Vega and his School.** Three credit hours. Prerequisite, Spanish 413-414.

The development of Lope's formula and a study of representative plays; Tirso de Molina; Alarcón. Lectures, collateral reading, discussion and reports.

701. **Minor Problems in Spanish.** Three to five credit hours. Autumn, Winter, and Spring Quarters. Prerequisite, at least junior standing with a

* Not given in 1935-1936.
† Not given during the academic year, 1935-1936.

3.5 point average in Spanish for the three Quarters last preceding and with the approval of the department. Mr. Anibal, Mr. Hendrix.

705-706-707. Honors Courses in Spanish. Three to ten credit hours. Autumn, Winter, and Spring Quarters. Work in conference, library or phonetics laboratory. Prerequisite, senior standing, with the record of "A" in at least half of the Spanish courses and an average of "B" in the remainder, and the approval of the department. Mr. Anibal, Mr. Hendrix.

This course is intended to give undergraduates of special aptitude a greater opportunity to do independent study than is possible in the ordinary course.

FOR GRADUATES

An undergraduate student shall not be permitted to take any course in the "800" group except by permission of the Graduate Council.

For description of graduate courses in this department, see the bulletin of the Graduate School.

SOCIAL ADMINISTRATION

Office, 112 Commerce Building

PROFESSORS STILLMAN, HAGERTY, NORTH, MARK, AND PATERSON, ASSOCIATE PROFESSOR DENUNE, ASSISTANT PROFESSOR JONES, MR. BLACKBURN, MISS SPAETH

Students who wish to carry additional courses in this Department are reminded that the College of Arts and Sciences permits thirty hours of work to be carried in courses offered in the Bulletins of other Colleges. See Bulletin of the School of Social Administration for further courses in this Department.

FOR ADVANCED UNDERGRADUATES AND GRADUATES

According to the University regulations, courses in this group are not open to Freshmen or Sophomores.

626. Penology. Three credit hours. Autumn Quarter. Prerequisite, Sociology 625. Mr. Hagerty.

The evolution of the methods of criminal procedure with an analysis and criticism of present-day methods. The organization and administration of penal institutions. As visits will be made to courts, jails, and prisons, students who take this course should be free to make these visits Saturday mornings.

Not open to students who have credit for Sociology 626.

***657. Welfare Problems in Rural Communities.** Four credit hours. Winter Quarter. Given in alternate years. Prerequisite, Sociology 401-402 or 410. Mr. Denune.

A consideration of health, child welfare, dependency, defectiveness, delinquency, and recreation. This course is designed to give to rural teachers, ministers, and social workers, a knowledge of the welfare problems which exist in rural communities and the methods by which they are being approached by rural workers.

Not open to students who have credit for Sociology 657.

700. Special Problems. One to four credit hours. Autumn, Winter, and Spring Quarters. Prerequisite, Sociology 401-402, senior standing, and permission of the instructor.

Individual study in some field of social interest.

FOR GRADUATES

An undergraduate student shall not be permitted to take any course in the "800" group except by permission of the Graduate Council.

For description of graduate courses in this department see the Bulletin of the Graduate School.

* Not given in 1935-1936.

SOCIOLOGY

Office, 111 Commerce Building

PROFESSORS LUMLEY, HAGERTY, NORTH, AND MARK, ASSOCIATE PROFESSOR DENUNE, ASSISTANT PROFESSOR COOK, MISS SPAETH, MR. KEGG, AND ASSISTANTS

Students who wish to carry additional courses in this Department are reminded that the College of Arts and Sciences permits thirty hours of work to be carried in courses offered in the Bulletins of other Colleges. See Bulletin of the School of Social Administration for further courses in this Department.

401-402. Principles of Sociology. Five credit hours. Two Quarters. Both 401 and 402 are given Autumn, Winter, Spring. Five recitations each week. Not open to Freshmen. Mr. Lumley, Mr. North, Mr. Denune, instructors, and assistants.

A study of the fundamental ideas and principles of sociology. Textbook, assigned reading, lectures, discussion, reports.

501. Introduction to Anthropology. Five credit hours. One Quarter. Autumn and Winter. Textbooks, lectures, papers, and discussions. Miss Spaeth.

The field of anthropology; origin and antiquity of man; racial types, the beginnings of culture and its diversification.

Not open to students who have credit for Sociology 611.

505. The Sociology of Urban Life. Five credit hours. Spring Quarter. Prerequisite, Sociology 401 and 402. Mr. Denune.

The place of the city in social organization. The emergence of urbanism. Racial, cultural, and economic groupings. Physical, intellectual and aesthetic well-being of the urban population and the agencies identified with these problems.

Not open to students who have credit for Sociology 655.

FOR ADVANCED UNDERGRADUATES AND GRADUATES

According to the University regulations, courses in this group are not open to Freshmen or Sophomores.

601. The Family. Four credit hours. One Quarter. Autumn and Spring. Prerequisite, Sociology 401-402. Miss Spaeth.

A survey of types of family organization from primitive times to the present; an analysis of the factors that entered into their development; the modern family, and an analysis of modern family problems.

605. The Immigrant. Four credit hours. Winter Quarter. Prerequisite, Sociology 401-402 or 410. Mr. Cook.

Alien migration to and within the United States; racial make-up and cultural heritages; trends and processes of adjustment; immigrant attitudes and institutions; unsolved problems of acculturation.

607. Race Contacts and Culture Conflicts. Four credit hours. Spring Quarter. Prerequisite, Sociology 401-402 or 410. Mr. Cook.

Racial types, origins, migrations, contacts, abilities, and attitudes. Rise of race consciousness. Designed as a general introduction to the more specialized fields of race, immigration and nationality.

608. The Negro in American Life. Four credit hours. Autumn Quarter. Prerequisite, Sociology 401-402. Mr. Cook.

A study of conflict situations, attitudes, and progress of the negro and methods of dealing with interracial problems.

610. The Standard of Living. Three credit hours. Spring Quarter. Three class meetings each week. Prerequisite, Sociology 401-402 or Economics 401-402. Miss Mark.

A consideration of the content of the various standards of living in American society. Their economic and social significance. Problems in family budgets and retail buying.

Not open to students who have credit for Economics 644.

*612. **Primitive Social Organization.** Three credit hours. Spring Quarter. Three class meetings each week. Textbooks, lectures, papers, and discussions. Given in alternate years. Prerequisite, Sociology 501. Miss Spaeth.

A study and analysis of types of social organization of primitive man, such as the clan, family, political organization, religion, etc.

Not open to students who have credit for Sociology 412.

618. **Poverty.** Three credit hours. Winter Quarter. Prerequisite, Sociology 401-402, or Economics 401-402. Mr. Hagerty.

Extent, nature and causes of poverty. Outlines of a program of prevention. The relation of the standard of living to social welfare. The relation of minimum wage laws to poverty.

625. **The Criminal.** Three credit hours. Spring Quarter. Prerequisite, Sociology 401-402. Mr. Hagerty.

The social, economic, and physiological causes of crime. The changing character of crime as modified by the legal code. Types of criminals, the instinctive, habitual, professional, etc. The classical and positive schools of criminology. The relation of feeble-mindedness and degeneracy to crime. Juvenile crime, its causes and prevention.

645. **Leisure and Recreation.** Four credit hours. Autumn Quarter. Prerequisite, Sociology 401-402.

The sources of leisure in early and modern society. The social significance and uses of leisure. The social functions of play. Historical aspects of play. The recreation problem of modern communities from the standpoint of control and of public provision.

656. **Rural Social Institutions.** Four credit hours. Autumn Quarter. Prerequisite, Sociology 401-402. Mr. Denune.

The problems of health, recreation, social intercourse, housing, child welfare, dependency, defectiveness, and delinquency in American rural communities and small towns. The agencies and organizations dealing with these problems.

665. **Social Order and Social Control.** Three credit hours. Autumn Quarter. Textbooks, lectures, papers, and discussions. Prerequisite, Sociology 401-402 or 410. Mr. Lumley.

A study of the various features of social control and the social order; the chief control devices or methods; agents, both private and public; institutional pressures; disruptive factors; the nature of social order. Additional readings for graduate credit.

666. **Social Evolution.** Three credit hours. Winter Quarter. Textbooks, lectures, papers, and discussions. Prerequisite, Sociology 401-402 or 410 or 612. Mr. Lumley.

A systematic study of the methods of social evolution such as variation, selection, transmission, adaptation. Additional readings for graduate credit.

667. **Social Progress.** Three credit hours. Spring Quarter. Textbooks, lectures, papers, and discussion. Open only to Seniors and graduate students. Prerequisite, Sociology 401-402 or 410. Mr. Hagerty.

A study of the various theories and the criteria of social progress. Extra readings for graduate credit.

700. **Special Problems.** One to four credit hours. Autumn, Winter, and Spring Quarters. Prerequisite, Sociology 401-402, senior standing, and permission of instructor.

Individual study in some field of social interest.

FOR GRADUATES

An undergraduate student shall not be permitted to take any course in the "800" group except by permission of the Graduate Council.

For description of graduate courses in this department see the Bulletin of the Graduate School.

SPANISH

(See Romance Languages and Literatures)

* Not given in 1935-1936.

SPEECH

(Majors in Speech may be carried either in the English Department or the Phonetics Division. See courses in The Drama and Public Speaking under English; courses in Speech Pathology, Speech and Hearing Clinic, Speech Science, and Pronunciation under Phonetics Division.)

SURVEY COURSES

(See page 47)

ZOOLOGY AND ENTOMOLOGY

Office, 101 Botany and Zoology Building

PROFESSORS OSBURN, OSBORN (EMERITUS), BARROWS, DeLONG, PETERSON, KENNEDY, AND SNYDER, ASSOCIATE PROFESSORS D. F. MILLER AND PRICE, ASSISTANT PROFESSORS KOSTIR AND J. A. MILLER, MR. J. N. MILLER, MR. WARNER, MR. BORROR, MR. SCHAEFER, MR. TIDD, MR. SCHOTT, MR. RIFE, AND ASSISTANTS

Students who wish to carry additional courses in this Department are reminded that the College of Arts and Sciences permits thirty hours of work to be carried in courses offered in the Bulletins of other Colleges. See Bulletin of the College of Agriculture for further courses in this Department.

ZOOLOGY

401-402. General Zoology. Five credit hours. Two Quarters. Both 401 and 402 are given Autumn, Winter, Spring. Five lecture-laboratory periods each week. Students intending to specialize in entomology should take this course in the Autumn and Winter Quarters of the first year. Pre-dental course, first year. Mr. Barrows, Mr. D. F. Miller, Mr. Price, Mr. J. A. Miller, instructors, and assistants.

A course intended to give the student a general view of the nature of animal life and to point out its relation to man's economic and social activities. The chief topics considered are as follows: nature and structure of living substance, food and its energy transformations, the essentials of reproduction; a review of the animal groups with special stress on useful and harmful qualities; animal distribution and relation to environment; heredity and evolution with particular stress upon their relation to human affairs.

403. General Principles of Heredity. Five credit hours. One Quarter. Autumn, Winter, Spring. Five lectures each week. Prerequisite, Zoology 401-402 or Botany 401-402 or equivalent. Mr. Snyder, Mr. Schott, Mr. Rife.

A study of heredity in animals and plants, to serve as an introduction to heredity, as a basis for advanced work in plant and animal breeding, and as an aid in the analysis of biological and sociological problems into which the question of heredity enters. The subject will be presented in lectures, illustrated with lantern slides and actual specimens. Exercises in the form of problems will be assigned. The different types of heredity studied will be chosen from the animal and plant material which best illustrates the subject. Hereditary characters found in man will be used to a large extent. The course will be made as simple and practical as the subject will permit. Present-day theories and technical applications will be left for discussion in the more advanced courses to which they properly belong.

408. Ornithology. Three credit hours. Spring Quarter. Two lectures and one laboratory period each week. Prerequisite, two Quarters of biological science. Mr. Dakan.

A study of the classification of birds, structure, food habits, nests, eggs, migration, together with the identification of species from museum material and in the field. Students should provide themselves with glasses for use on field trips.

504. General Parasitology. Five credit hours. One Quarter. Winter and Spring. Two lectures and three two-hour laboratory periods each week. Prerequisite, Zoology 401-402 or equivalent. Mr. J. N. Miller and assistants.

An introductory course in parasitology stressing general principles of parasitism and the morphology and physiology of parasites as illustrated by the protozoan, helminth, and arthropod

groups. This course is required of veterinary students in the sophomore year and is recommended for those specializing in medicine and zoology. Attention is given to the influence of the parasites upon their hosts, their relation to disease, their identification, and the general conditions of parasitic life.

509. Evolution. Five credit hours. One Quarter. Winter and Spring. Five lectures each week. Prerequisite, two Quarters of biological or geological science. Mr. Osburn.

The facts and theories of organic evolution. The general treatment is: historical aspects, evidences, factors, and the theories proposed from the time of Lamarck to the present.

Not open to students who have credit for Zoology 409.

FOR ADVANCED UNDERGRADUATES AND GRADUATES

According to the University regulations, courses in this group are not open to Freshmen or Sophomores.

601. Advanced Genetics. Three credit hours. One Quarter. Autumn and Winter. One lecture and two laboratory periods each week. Prerequisite, Zoology 403 or equivalent and permission of the instructor. Mr. Snyder.

This is largely a study of human inheritance, with especial emphasis on the methods of research in this branch of genetics. The mathematical analysis of human pedigrees is intensively studied.

605. Animal Behavior. Three credit hours. Autumn Quarter. One lecture each week and the remainder laboratory work. Given in alternate years. Prerequisite, Zoology 401-402 or equivalent, two additional Quarters of biology, and permission of the instructor. Mr. Barrows.

Devoted to the study of the functions of the various parts of the nervous system of the invertebrates, with emphasis on the mechanics of adjustment to heat, light, chemical, and mechanical stimulation. Considerable time will be spent on experiments with living worms and insects.

***606. Animal Behavior.** Three credit hours. Winter Quarter. One lecture each week and the remainder laboratory work. Given in alternate years. Prerequisite, permission of the instructor. Mr. D. F. Miller.

This course is devoted to the study of the response of insects to the stimulating factors of their environment. These studies are directed toward the types of behavior which are important in insect control.

609. Animal Microtechnic. Three or five credit hours. Autumn Quarter. A laboratory course. Laboratory work, assigned readings, and conferences. Prerequisite, Zoology 401-402 or equivalent. This course is designed for students intending to major in one of the biological sciences. The registration is limited to twelve students and permission of the instructor must be obtained before registering for the course. Mr. Kostir.

Theory and practice of microscopic methods, including fixing, embedding, sectioning, and staining of animal tissues, making permanent preparations, and special manipulation of the microscope and its accessories.

Not open to students who have credit for Zoology 407.

617. Cellular Biology I. Three or five credit hours. Winter Quarter. Three lectures and two two-hour laboratory periods each week. Permission of the instructor must be obtained before registering for this course. Mr. Kostir.

A study of the organization of living cells and the fundamental phenomena of life.

618. Cellular Biology II. Three or five credit hours. Spring Quarter. Three lectures and two two-hour laboratory periods each week. Prerequisite, Zoology 403 or equivalent. Zoology 617 is desirable but not essential. Mr. Kostir.

A study of the physical basis of heredity, variations, and evolution.

620. Advanced Zoology of Vertebrates. Five credit hours. Spring Quarter. Three lectures and two two-hour laboratory periods each week. Prerequisite, Zoology 401-402, or equivalent. Zoology 509 and one Quarter in comparative anatomy are also desirable. Mr. Price.

A study of the various vertebrate groups, emphasizing their origin, phylogeny, classification, life-histories, habits, distribution, and economic importance. Laboratory, museum, and field work. Especially recommended for students specializing in biological science.

* Not given in 1935-1936.

625. Advanced Zoology of Invertebrates I: The Protozoa. Five credit hours. Autumn Quarter. Two lectures and three two-hour laboratory periods each week. Prerequisite, Zoology 401-402 or equivalent. Mr. Kostir.

Zoology 625, 626, and 627 are fundamental courses designed to give the student a general knowledge of the structure, life histories, habits, and relationships of the invertebrate animals. While it is preferable that these courses be taken in the order given, this is not essential, and any one of the three may be elected independently of the others. Course 625 deals with the Protozoa, including both free-living and parasitic forms.

Not open to students who have credit for Zoology 615.

626. Advanced Zoology of Invertebrates II. Five credit hours. Winter Quarter. Two lectures and three two-hour laboratory periods each week. Prerequisite, Zoology 401-402 or equivalent. Mr. Kostir.

A study of the structure, life histories, habits, and relationships of sponges, coelenterates, worms, and arthropods, together with the consideration of important biological principles illustrated by these groups. Note statement under Zoology 625.

Not open to students who have credit for Zoology 616.

627. Advanced Zoology of Invertebrates III. Five credit hours. Spring Quarter. Two lectures and three two-hour laboratory periods each week. Prerequisite, Zoology 401-402 or equivalent. Mr. Kostir.

A study of the structure, life histories, habits, and relationships of molluscs, echinoderms, brachiopods, bryozoa, together with the consideration of important biological principles illustrated by these groups. Note statement under Zoology 625.

630. The Interpretation of Biological Data. Five credit hours. Winter Quarter. Three lectures and two two-hour laboratory periods each week. Permission of instructor must be obtained before registering for this course. Mr. Schott.

A study of biological variability, methods of classification, and analysis, based on biometrical usage. The methods of collecting and assembling data and the consideration of their biological validity will be stresseed.

701. Special Problems. Three or five credit hours each Quarter. Autumn, Winter, Spring. A student may enter at the beginning of any Quarter. Prerequisite, satisfactory preparation for individual work in the field of the chosen problem. The student may have free choice of the instructor under whom he desires to work, but the permission of the instructor must be obtained before registering for the course. The staff.

FOR GRADUATES

An undergraduate student shall not be permitted to take any course in the "800" group except by permission of the Graduate Council.

For description of graduate courses in this department see the Bulletin of the Graduate School.

ENTOMOLOGY

550. General Entomology. Five credit hours. Winter Quarter. Three lecture and two two-hour laboratory periods each week. Prerequisite, Zoology 401-402 or equivalent. Not open to freshmen, except by special permission. Mr. DeLong and assistants.

A survey of the orders and families of insects with special emphasis on the biology and habits of the more important families. In the laboratory the more important insect families will be studied.

This course is especially recommended for students in the Colleges of Arts and Sciences and Education, who intend to teach biology, or who wish an introduction to the study of insects.

Not open to students who have credit for Entomology 452 or 450.

551. Economic Entomology. Five credit hours. One Quarter. Autumn and Spring. Three lectures and two two-hour laboratory periods each week. Prerequisite, Zoology 401-402 or equivalent. Not open to freshmen, except by special permission. Mr. DeLong and assistants.

The economic importance of insects, the basis for insect control, a survey of the important pests of farm, garden, orchard, forest, household, mill, storehouse, and those that affect the health of man and domestic animals, with a discussion of their specific control.

Field observations of habits and damage, the recognition of many economic species and the

preparation and application of remedial measures. Students are required to prepare a collection. Those desiring to collect specimens in advance should get printed instructions from the department.

Not open to students who have credit for Entomology 451.

FOR ADVANCED UNDERGRADUATES AND GRADUATES

According to the University regulations, courses in this group are not open to Freshmen or Sophomores.

651-652. Advanced Entomology. Five credit hours. Autumn and Winter Quarters. Two lectures and three two-hour laboratory periods each week. Prerequisite, two Quarters of zoology and two Quarters of entomology or other biological science. Mr. Kennedy.

Advanced entomology for those wishing to investigate some special group of insects or to fit themselves for professional work in entomology.

Entomology 651 deals with the comparative external morphology, evolutionary history and classification of insects. Laboratory work is systematic and material will be furnished, but it will be preferable if the student collects and pins material for himself during the summer preceding.

Entomology 652 deals with insect behavior, life histories, and particularly with the ecological principles governing occurrences and distribution of insect species, and the principles underlying insect control. The laboratory work is systematic. The two Quarters cover all the insect orders.

653-654. Insect Control. Five credit hours. Autumn and Spring Quarters. Two lectures and three laboratory periods each week. Prerequisite, Zoology 401-402 and Entomology 550-551 or equivalent. Mr. DeLong.

Principles of economic entomology, circumvention and exclusion, cultural methods, traps and trap crops, heat, animal dips, insecticides, insecticide machinery, and accessories, and practical work in fumigation, spraying, inspecting, preparing an entomological exhibit and a collection of economic insects, rearing and insectary methods. Practical course intended to anticipate, so far as possible, the requirements and difficulties which the student will encounter in state or federal entomological work.

655. Medical and Veterinary Entomology. Five credit hours. Winter Quarter. Given biennially. Three lectures and two laboratory periods each week. Prerequisite, Zoology 401-402 and Entomology 550-551 or equivalent. Mr. DeLong.

The insects, mites, and ticks which cause or transmit diseases of man and domestic animals; the sources of infection, methods of transmission and interrelations with pathogenic bacteria and protozoa; the relations of the subject to parasitology, bacteriology, veterinary medicine, sanitary engineering and public health; field observations of unsanitary conditions, practice in feeding, breeding and handling experimental insects, and practical problems in the control of parasites and insect-borne diseases.

The student is advised if possible to take Zoology 504 before electing this course.

701. Special Problems. Three or five credit hours each Quarter. Autumn, Winter, Spring. A student may enter at the beginning of any Quarter. Prerequisite, satisfactory preparation for individual work in the field of the chosen problem. The student may have free choice of the instructor under whom he desires to work, but the permission of the instructor must be obtained before registering for the course. The staff.

FOR GRADUATES

An undergraduate student shall not be permitted to take any course in the "800" group except by permission of the Graduate Council.

For description of graduate courses in this department see the Bulletin of the Graduate School.

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