

Cornell University

ANNOUNCEMENTS

College of Arts and Sciences



1965-66



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Arts and Sciences

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Academic Calendar

	1965-66	1966-67
Freshman Orientation	S, Sept. 18	S, Sept. 17
Registration, new students	M, Sept. 20	M, Sept. 19
Registration, old students	T, Sept. 21	T, Sept. 20
Instruction begins, 1 p.m.	W, Sept. 22	W, Sept. 21
Preregistration for fall term (Arts and Sciences)	Nov. 8-17
Midterm grades due	W, Nov. 10	W, Nov. 9
Thanksgiving recess		
Instruction suspended, 12:50 p.m.	W, Nov. 24	W, Nov. 23
Instruction resumed, 8 a.m.	M, Nov. 29	M, Nov. 28
Christmas recess		
Instruction suspended, 10 p.m. (12:50 p.m. in 1965)	S, Dec. 18	W, Dec. 21
Instruction resumed, 8 a.m.	M, Jan. 3	Th, Jan. 5
First-term instruction ends	S, Jan. 22	S, Jan. 21
Registration, old students	M, Jan. 24	M, Jan. 23
Examinations begin	T, Jan. 25	T, Jan. 24
Examinations end	W, Feb. 2	W, Feb. 1
Midyear recess	Th, Feb. 3	Th, Feb. 2
Midyear recess	F, Feb. 4	F, Feb. 3
Registration, new students	S, Feb. 5	S, Feb. 4
Second-term instruction begins, 8 a.m.	M, Feb. 7	M, Feb. 6
Midterm grades due	S, Mar. 26	S, Mar. 25
Spring recess		
Instruction suspended, 12:50 p.m.	S, Mar. 26	S, Mar. 25
Instruction resumed, 8 a.m.	M, Apr. 4	M, Apr. 3
Second-term instruction ends, 12:50 p.m.	S, May 28	S, May 27
Final examinations begin	M, May 30	M, May 29
Final examinations end	T, June 7	T, June 6
Commencement Day	M, June 13	M, June 12

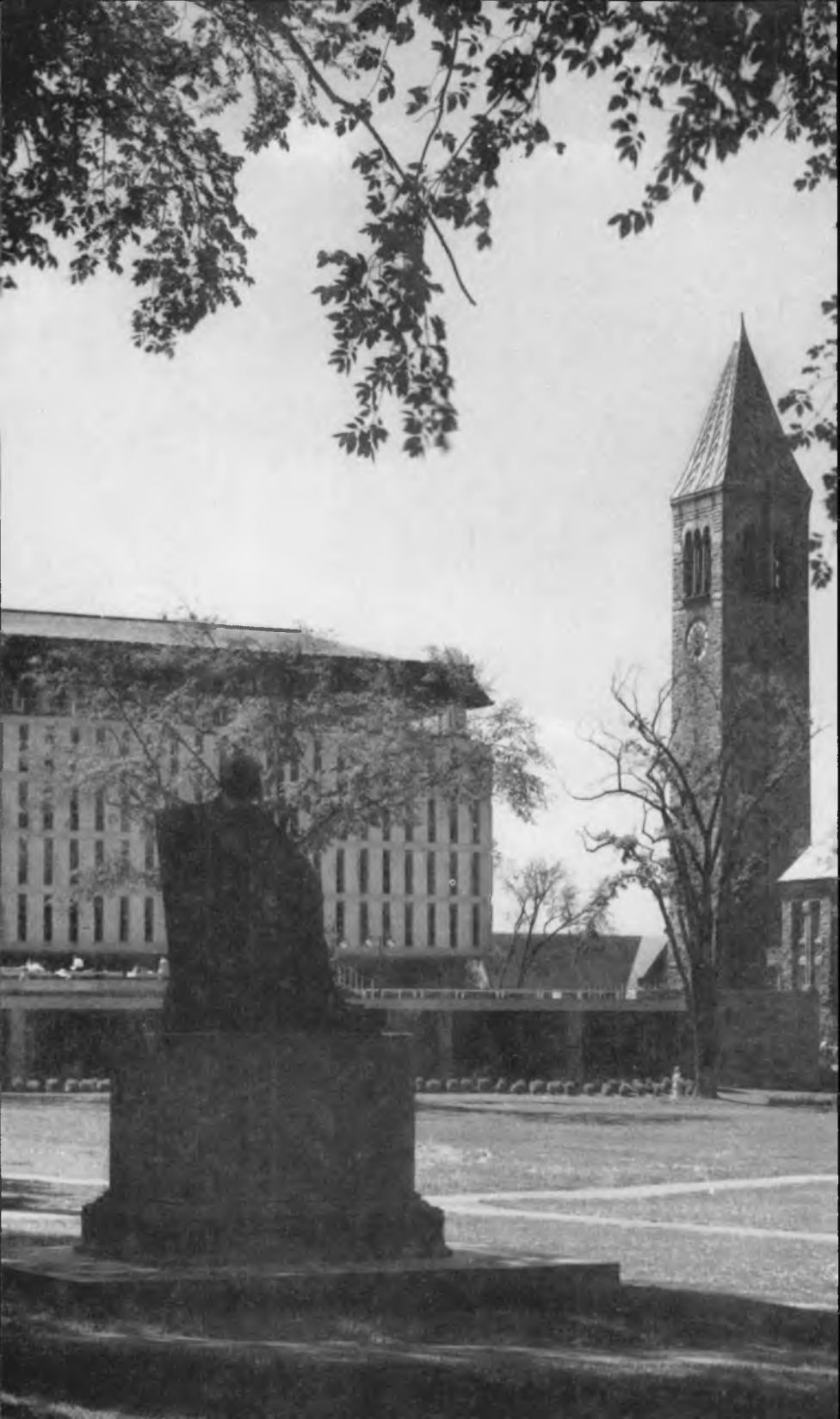
The dates shown in the Academic Calendar are tentative.

CORNELL UNIVERSITY ANNOUNCEMENTS

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Cornell University

COLLEGE OF ARTS AND SCIENCES

The College of Arts and Sciences is a liberal arts college. Its essential purpose is the one that has always motivated the teaching of the liberal arts; that is, to permit students to acquire the arts that make a free man, in the sense that a man is free only when he understands his own nature and that of the world. Though such understanding sometimes requires technical skills and always requires intellectual ones, it consists in something more than either. In its fullest sense it is an understanding that is indistinguishable from a way of living.

To this end the College offers a carefully designed and, in some ways, unique program of studies in languages and literatures, in philosophy, music, and the fine arts, and in mathematics, the natural sciences, the social sciences, and history. The range and diversity of its offerings in these subjects are unsurpassed anywhere. The student's program is so arranged that, for the first two years, he studies in some depth a number of these subjects. In this underclass work he must include at least a year's work in one of the natural sciences, in one of the social sciences, and in one of the humanities, in addition to achieving competence in the use of the English language and in the use of at least one foreign language.

In his upperclass years, he must carry further his work in two or three of these areas of knowledge and must acquire a thorough knowledge of one of them, his major subject. For this purpose the student's program is reduced during the upperclass years from five to four courses, in order that he may work more independently in subjects in which he has advanced to the point where he may benefit from working on his own. For such independent work Cornell's great libraries provide every opportunity.

Though this program of studies has been constructed primarily to as-

sure the successful achievement of a liberal education itself, it is also, according to the graduate schools of law, medicine, and business administration, the best preparation for professional study.

Because the faculty believes a student ought to complete his education as rapidly as is compatible with his doing it well, the College will grant him, at admission, advanced standing in any freshman subject in which he can demonstrate competence. A properly prepared student may thus gain college credit for as much as a full year of work. If he does so, he will begin his career at Cornell as a sophomore and can complete his work for the degree in three years.

REQUIREMENTS FOR ADMISSION

An applicant for admission to the freshman class in the College of Arts and Sciences must have completed a secondary school course giving satisfactory preparation for the work of the College. Sixteen units of entrance credit are required, representing at least four years' work in a preparatory or high school. The sixteen units must include four years of English, three years of preparatory mathematics, and three of a foreign language, ancient or modern, together with a satisfactory score on the College Entrance Examination Board Achievement Test in the language. Candidates who have had less than three years of preparation in a foreign language but who make a satisfactory score on the Achievement Test will meet the requirement. (Since there is a substantial language requirement for the degree, a lower level of preparation than this would be unsuitable.) The remaining units should be chosen from laboratory science (at least one unit of biology, chemistry, or physics), social studies (at least one unit of history, government, or geography), and further work in mathematics and foreign language. Wherever possible, these minimum sixteen units should be supplemented by additional courses in similar academic subjects. Exceptions to these requirements may be granted when the applicant's record shows high academic distinction.

As a guide to prospective students and to guidance counselors, the following program of college preparatory work is recommended: English, four units, with emphasis on comprehension in reading and on clarity and facility in expository writing; mathematics through trigonometry, i.e., sufficient to enable the student to begin calculus during his first year in college should he wish to do so; foreign languages, ancient or modern, taken every year, with the objective of achieving a really useful knowledge (four units or more) of one language, and some knowledge (at least two units) of a second; social studies (at least one unit); laboratory science (at least one unit—if more than one unit is taken, each unit ordinarily should be taken in a different science). Where the opportunity exists, students are urged to begin the study of a foreign language in

the seventh grade or earlier. The most generally useful modern languages for advanced study are French and German. For work in the sciences, Russian is becoming increasingly important; for work in the humanities, the classical languages are of great importance. Students considering a science major in college are advised that thorough preparation in mathematics will be more valuable than extensive concentration in a single science.

Each candidate for admission is required to take, in December or January, the College Board Scholastic Aptitude Test, the English Composition Test, and the Achievement Test in at least one language, and to request the Board to report the results to the Office of Admissions, Cornell University. A candidate should also keep in mind the further language requirement to be met in college (see page 13). If he has had two or more years of a second foreign language in school and wishes to use that language toward fulfilling the requirement in college, he should also take the Achievement Test in that second language, though he need not do so as early as December or January. Acceptable scores on the Achievement Tests in modern foreign languages will be set to correspond with the actual amount of instruction received at the time the tests are taken and to measure the achievement after one and a half years, two and a half years, or three years of instruction.

An applicant for admission who has completed a year or more of work in another institution of recognized collegiate rank will be expected to have had preparatory work equivalent to that prescribed for freshmen. In addition, his progress in meeting the requirements in courses and hours as listed for underclassmen and admission to upperclass standing will be carefully examined. Action on completed applications for transfer will be taken about May 15.

Not all applicants can be admitted. Those that seem best qualified are selected after a comparative study not only of the formal preparation, but also of the evidence relating to each applicant's character, seriousness of purpose, and fitness to undertake the work of the College. Only a relatively small number of transfer students can be accepted.

Application forms may be obtained from the Office of Admissions, Day Hall, and all communications concerning admissions should be addressed there. Applications must be returned to the Admissions Office by January 15.

Accepted applicants should read carefully the sections on health requirements, health services, and medical care in the *Announcement of General Information*. Some health requirements may be met prior to entrance.

The *Announcement of General Information* should be consulted for other matters of general interest such as details on entrance requirements, living expenses, tuition, fees, applications for financial aid, motor vehicle

regulations, and student conduct. The various Announcements of Cornell may be obtained by writing to the Announcements Office, Day Hall, Ithaca, New York, or by inquiring at the administrative offices of the several colleges and schools.

ADVANCED PLACEMENT

Advanced placement and advanced standing credit toward the degree of Bachelor of Arts may be achieved by an entering freshman in a variety of subjects and in a variety of ways.

Both advanced placement and advanced standing credit may be earned by high attainment on the College Board Advanced Placement Examinations in the following subjects: American history, biology, chemistry, European history, German literature, Latin, mathematics, Spanish literature, and physics. (A student planning further work in mathematics must also take the departmental advanced placement examination.) Both advanced placement and advanced standing credit may be earned by high attainment on departmental examination, given usually at entrance, in the following subjects: biology, botany, chemistry, European history, mathematics, music, physics, and zoology.

In modern foreign languages, a student showing superior attainment on the College Board Language Achievement Test may be exempted from three or six hours of the requirement of advanced work after Qualification and receive three or six hours of advanced standing credit.

In freshman English, advanced placement and advanced standing credit may be awarded to a freshman who has a distinguished record in an advanced program in secondary school and who has received a satisfactory score on the College Board Advanced Placement Examination in English. A student who has not taken an advanced placement course in secondary school may be considered for advanced placement and credit on the basis of his school grades, his scores on the tests normally required for admission, and his score on the Advanced Placement Examination if he has taken it.

More detailed information about the possibilities and procedures of advanced placement is contained in *Advanced Placement of Freshmen at Cornell University*, available from the Office of Admissions, Day Hall, or from the Secretary of the College of Arts and Sciences, Goldwin Smith Hall.

A student may use his advanced standing credit to satisfy underclass distribution requirements of the College. Advanced standing credit for a freshman is limited to 30 hours, including any credit for summer session study prior to matriculation.

A student admitted to the College of Arts and Sciences from another college of Cornell University, or from any other institution of collegiate

rank, will receive credit toward the degree of Bachelor of Arts for the number of hours to which his record may, in the judgment of the faculty, entitle him, provided that the total number does not exceed sixty hours. No more than fifteen hours may be in courses not commonly given by the College of Arts and Sciences. In order, however, to obtain the degree of Bachelor of Arts, a student must, as a candidate for that degree, have been in residence at least two years in the College of Arts and Sciences, and in that college only.

REGISTRATION IN COURSES

During a designated period each term, a student will, with the aid of an adviser, prepare a program of studies for the following term. For the academic year 1965-1966 registration periods will be:

For fall term courses. . . . April 26 to May 5, 1965

For spring term courses. . . . November 8 to 17, 1965

For late filing of a program of studies a fee of \$10 will be charged.

Failure to register during the announced period will be interpreted as intention to withdraw.

Every student must register in each term for at least twelve academic hours, exclusive of basic military training and physical education. The normal program for underclassmen will consist of five three-hour courses; upperclassmen will be expected to carry a program of no more than four courses consisting mainly of four-hour courses. No student may carry more than seventeen hours without special permission. In order for a student to maintain satisfactory progress toward the degree, his program must average fifteen hours a term.

Program changes will be permitted, without petition or fee, upon recommendation of the adviser, prior to May 29 for the fall term and prior to December 15 for the spring term, and again during the first two weeks of instruction in each term. After the first two weeks of instruction any change will be subject to a \$10 fee and will be allowed only upon petition. After the date for reporting midterm grades a course may be canceled for medical reasons only.

Freshmen will register by mail in the summer and may expect the necessary material early in June from the Chairman of the Advisory Board for Underclassmen.

ADVISERS

During the summer each entering freshman and re-entering underclassman will be assigned to a member of the Advisory Board for Underclassmen, which has jurisdiction over freshmen and sophomores. The function of the underclass adviser is to assist the student in his choice of studies, to



advise him during the term regarding his work, and to give him friendly counsel.

At the time of admission to upperclass standing, the student will be assigned an adviser in the department administering his major study. The major adviser will guide the student in his selection of courses, counsel him on matters affecting his academic work, and supervise his progress toward the degree.

Both underclassmen and upperclassmen are expected to show initiative in planning their programs and to assume a large measure of responsibility for their progress in meeting requirements.

THE CURRICULUM

The curriculum emphasizes a progression from underclass to upperclass studies both in the organization of courses and in the method of instruction and study. The underclass years provide opportunity for some exploration, for general education, and for satisfaction of the prerequisites for upperclass study. In the upperclass years the student concentrates on the mastery of a major division of subject matter and on deepening his understanding of other disciplines.

Admission to upperclass study will depend upon satisfying a set of specific requirements (see below) and upon the quality of the student's work. Provisions for credit at entrance and in summer session permit the student to shorten the period of study as an underclassman substantially. Upperclassmen will carry fewer courses (four courses a term) and will be expected to supplement the formal instruction in the classroom by an increased amount of directed independent study.

Study abroad during the junior year is permitted under special conditions by some departments. Many departments, however, find it incompatible with an integrated major program in the upperclass years.

PROGRAM OF COURSES

Undergraduate courses are offered at four levels numbered as follows:

100-199 Introductory courses, primarily for freshmen and sophomores, normally carrying three hours of credit. When it is in a student's academic interest to take as an upperclassman a course which is numbered below 200 and from which upperclassmen are not specifically excluded, his adviser may permit him to do so. These courses satisfy the group distribution requirements when so specified by the department. (See also the prerequisite requirement of the major).

200-299 Intermediate courses primarily for underclassmen, normally carrying three hours of credit; may not be counted in satisfaction of upperclass major requirements. These courses include second courses

prerequisite to the major, and general and special courses for the non-major.

300-399 Advanced courses primarily for juniors and seniors, normally carrying four hours of credit.

400-499 Courses on the senior and graduate-student level, normally carrying four hours of credit.

Underclassmen may register for upperclass courses at whatever point they are able to meet the prerequisites of such courses. Freshmen, however, will ordinarily register for 100-level courses.

UNDERCLASS REQUIREMENTS

For admission to upperclass standing, an underclassman is required to:

1. Offer sixty hours of credit of satisfactory quality, exclusive of credit in military training and physical education. These hours may include advanced standing credit and supplementary summer session study. Advanced standing credit including summer session credit is limited to thirty hours.

2. Meet the requirement in English.

3. Meet, as part of the foreign language requirement, at least the level of Qualification in one foreign language. Students are encouraged to fulfill the entire language requirement as underclassmen. When a student has attained Qualification in one language and it is in his academic interest to delay completion of the language requirement until the junior year, his adviser may permit him to do so. However, it should be noted that any department may demand completion of the language requirement as one of the prerequisites for acceptance into the major.

4. Complete the basic prerequisites of the major.

5. Present to his prospective major adviser an acceptable plan for completing the distribution requirements. In preparation the underclassman is encouraged to complete in his underclass years the first set of distribution requirements as well as any prerequisite courses necessary for the satisfaction of the second set of distribution requirements. When it is in the student's academic interest to delay completion of these requirements until the upperclass years, his adviser may permit him to do so. However, it should be noted that some departments may demand completion of Distribution I as one of the prerequisites for acceptance into the major.

6. Be officially accepted into a major.

7. Satisfy the physical education requirement. The University requires that all physically qualified students who are candidates for a baccalaureate degree take physical education during the first four terms of residence. Material describing the course offerings will be made available to entering students by the Department of Physical Education.

DISTRIBUTION REQUIREMENTS

A. LANGUAGE

1. **ENGLISH.** English Courses 111-112, 119-120, or 213-214 must be completed. They must be begun in the first term of residence. Placement in these courses will be based on the student's secondary school record in English and on his Achievement Test score. Foreign students may satisfy the requirement by passing English 211-212, offered by the Division of Modern Languages.

2. **FOREIGN LANGUAGE.** This requirement may be completed in ancient or modern foreign languages by (a) meeting prescribed standards in a single language, or (b) attaining Qualification in two languages, or (c) attaining Qualification in one language when the student has offered for admission three units of some other language taught at Cornell. Courses used to meet the language requirement may not be used to satisfy the humanities requirement in literature.

In the ancient languages the level required in a single language is met in Greek by completing Greek 203, in Hebrew by completing Hebrew 202. In Latin, students offering three or four years at entrance satisfy the requirement by completing Latin 112 after either Latin 109 or 111; students offering two years of Latin satisfy the requirement with Latin 107, 109 and 111. In Latin a student attains Qualification on the basis of the College Board Achievement Test, or on his secondary school record, or by passing Latin 107.

In modern languages, Qualification is a level of achievement defined by examination for those languages in which instruction is offered at Cornell. The examination may be the College Board Achievement Test, the placement examination administered by the Division of Modern Languages, or (for students in course) the final examination in Courses 102 or 112. It indicates that a student is ready to proceed to Courses 201 and/or 203. Students may attain Qualification in Burmese, Chinese, French, German, Hindi, Indonesian, Italian, Japanese, Portuguese, Russian, Sinhalese, Spanish, Telugu, Thai and Vietnamese. Qualification in two of these satisfies the language requirements. Satisfaction of the language requirement in just one of them requires course work beyond Qualification, the amount of which will depend upon a student's initial placement in that language.

At entrance, a student's placement will be determined on the basis of the College Board Achievement Test in the language or languages in which he proposes to satisfy the requirement. If he attains Qualification (a level normally reached by completing Course 102 in that language), he may satisfy the language requirement by passing an additional six hours of advanced work, excluding courses in literature in translation.

If he is placed in Course 112, he must pass the Qualifying Examination at the end of that three-hour course and then complete six hours of advanced work in that language. If he is placed in Course 102, he must pass the Qualifying Examination at the end of that six-hour course and then complete three hours of advanced work in the language. If a student wishes to make a fresh start in a modern foreign language, satisfaction of the language requirement in that one language will normally require fifteen hours of course work.

Furthermore, a student of superior attainment may on entrance be exempted from three hours of the requirement of advanced work after Qualification and receive three hours of advanced standing credit, or be exempted from six hours and receive six hours of advanced standing credit, thus satisfying the requirement in that language.

A student wishing to continue a modern foreign language begun in secondary school in which he has not taken a College Board Achievement Test must first take a placement examination given by the Division of Modern Languages. The examination will be given at the end of every semester and on October 27 and April 6 of the 1965-1966 academic year.

A student who enters from a foreign country and whose mother tongue is not English may satisfy the foreign language requirement by demonstrating competence in English, which shall be defined for the purpose as a modern foreign language.

B. DISTRIBUTION I

Each student must complete a six-hour sequence in four of the seven groups listed below, including one six-hour sequence in the physical or biological sciences, one in the social sciences or history, and one in the humanities or expressive arts.

1. *Mathematics*
2. *Physical Sciences*: Astronomy, Chemistry, Geology, Physics
3. *Biological Sciences*: Biology, Botany, Zoology
4. *Social Sciences*: Anthropology, Economics, Government, Linguistics, Psychology, Sociology
5. *History*
6. *Humanities*: Classics, English (excluding English 111-112 and 119-120), Literature, Modern Foreign Literatures, Philosophy
7. *Expressive Arts*: History of Art, Music, Special Forms of Writing (English 203-204), Speech and Drama

C. DISTRIBUTION II

Each student must complete before graduation fourteen hours in courses numbered 200 or above in either (a) one set of four courses in one subject, or (b) two closely related courses in one subject and two in another.

The satisfaction of this requirement must be approved by the major adviser.

No course used to satisfy Distribution I may be counted toward the fulfillment of Distribution II. No course used to satisfy Distribution II may be in the major subject or used in satisfaction of the major; nor may it be used in satisfaction of the language requirement. Advanced standing credit may not be used to satisfy this requirement.

UPPERCLASS REQUIREMENTS

After admission to upperclass standing, an upperclassman shall complete four full terms in this College, not excluding approved courses of upperclass study elsewhere, such as *in absentia* study abroad in the junior year. Additionally, he shall:

1. Complete a minimum of sixty hours of upperclass study, of which no more than twelve hours may be taken outside the College. However, specified courses satisfying requirements of the major taken outside the College need not be counted in this twelve-hour maximum. At least fifteen of the required sixty hours must be earned in courses not given by the department supervising his major and not offered by the student in satisfaction of the major. A 100-level course in the College may be counted in the sixty hours of upperclass study only if a student's taking the course is approved by his adviser as being in the student's academic interest.

2. Pass three-fourths of his hours at seventy or better.

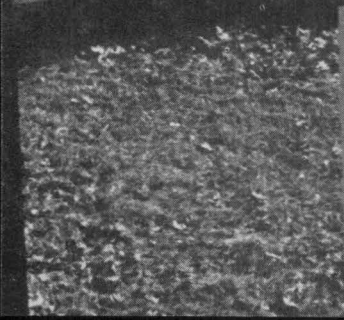
3. Complete the distribution requirements.

4. Satisfy the specified requirements of the major as listed by his major department. The major in a subject is defined as including not only the courses in that department but also the courses in related subjects offered in satisfaction of the major requirements. For an upperclass student the normal load per term in his major is two or three courses at the 300 level or above.

CREDIT FOR SUMMER SESSION

Credit for work done in summer sessions at Cornell or elsewhere may be granted to the extent of eighteen hours. More detailed regulations are printed on the Petition for Summer Session Credit which should be filed before a student enrolls for summer study.

Summer session credit is usable chiefly for advancing toward upperclass standing. Courses may be taken in the summer before entrance, but these should be limited to the usual college introductory courses and will be subject to approval for advanced standing credit at matriculation. Summer courses taken after a student matriculates must be approved in advance for the particular purpose in mind.



Since the curriculum is designed to have a student complete four full terms of advanced or upperclass study at Cornell (at an average rate of 15 hours per term), summer session credit is generally not applicable after a student has been admitted to upperclass standing. Special summer work required or approved by the major department (for instance, geology summer field camp) may carry upperclass credit but may not be included in the minimum of 32 hours required in the major.

No credit may be earned in a summer session of less than four weeks except by special permission; and no credit will be allowed for a course passed at less than a grade of 70, or C, or the equivalent.

Any student who undertakes summer session study without prior approval of his adviser, the department concerned, and the Dean does so without any assurance that he will receive academic credit.

LEAVES OF ABSENCE

For reasons satisfactory to the Dean and the faculty, a student may be given a leave of absence for a definite or indefinite length of time. If, because of financial, family, or health reasons, a student is required to absent himself for a period of time, but with the expectation of returning, he should apply for a leave of absence. Leaves of absence for medical reasons are issued only upon the recommendation of the University Clinic. Students withdrawing permanently should notify the Dean's Office.

No credit toward graduation may be earned while on leave of absence except in a limited amount by members of the armed services.

GRADES AND SCHOLASTIC DISCIPLINE

Grades are assigned in accordance with the following schedule: passing grades, 60, 65, 70, 75, 80, 85, 90, 95, 100; failing grades, 50 and 40. No credit toward graduation will be given for a course in which a failing grade has been received, unless the course is repeated and a passing mark received.

The mark of *inc* will be used to indicate that a course has been left incomplete with respect to specific assignments which may include the final examination. The mark of *inc* will be assigned only in case of illness or prolonged absence beyond the control of the student, and only when the student has a substantial equity in a course. A student will have a substantial equity in a course when the remaining work can be completed without further registration in the course and when he has a passing grade for the completed portion. A mark of *inc* may be removed, with the consent of the Dean and upon payment of the fee required by the University, by examination or otherwise as the department may direct. An incomplete that is not removed within one term will revert

to a failing grade of fifty, unless an extension of time is granted by the Committee on Academic Records.

An underclassman failing to make satisfactory progress in grades and hours may be placed on probation or asked to leave at any time. Failure to meet the requirements for upperclass standing after four terms ordinarily will terminate the student's residence. An upperclassman failing to pass three-fourths of his hours at seventy or better, or failing to make satisfactory progress in his major, may be placed on probation or asked to withdraw.

REQUIREMENTS FOR THE DEGREE

RESIDENCE

The degree of Bachelor of Arts will not be conferred upon any student who has not been in residence in Cornell during the last two terms preceding graduation and registered in the College of Arts and Sciences. The minimum residence requirement is four full terms of upperclass study. A student may not exceed eight terms of residence without permission of the Committee on Academic Records. A student in good standing who leaves his degree in abeyance should not expect a request for reinstatement to be considered after five years.

BACHELOR OF ARTS

For the degree of Bachelor of Arts, a candidate must:

1. Have earned credit for one hundred and twenty hours under the conditions specified in the description of underclass and upperclass requirements.
2. Have satisfied the prescribed underclass and upperclass requirements.
3. Have completed the work in physical education as prescribed by the University faculty.

BACHELOR OF ARTS WITH DISTINCTION

The degree of Bachelor of Arts with Distinction in all subjects will be conferred upon those students who, in addition to having completed the requirements for the degree of Bachelor of Arts, (1) have received the grade of 80 or better in at least ninety hours of courses, and of 90 or better in at least sixty of these; (2) have not received a grade below 70 in more than one course; (3) have received no marks lower than 60. To qualify for the degree of Bachelor of Arts with Distinction in all subjects, a candidate must have completed at least sixty hours at Cornell in courses taught in the College of Arts and Sciences; and if he has received credit toward his degree for work done in another institution,

the requirement of grades shall be prorated for the residue of work which must be completed in Arts and Sciences at Cornell.

BACHELOR OF ARTS WITH HONORS

The degree of Bachelor of Arts with Honors will be conferred upon those students who, in addition to having completed the requirements for the degree of Bachelor of Arts, have satisfactorily completed the Honors program in their major subject and have been recommended for the degree by the department representing their major subject.

Honors programs are designed to free the exceptionally promising student for a substantial portion of his time from the ordinary requirements of academic courses in order that he may be able to broaden and deepen his understanding of the field of his special interest, to explore branches of his subject not represented in the regular curriculum, and to gain experience in original investigation. A candidate for the degree of Bachelor of Arts with Honors is usually required to pass a comprehensive examination in his major subject or to submit a thesis or some other satisfactory evidence of capacity for independent work. He may receive the degree with honors at one of three levels: *cum laude*, *magna cum laude*, or *summa cum laude*. When performance does not justify a degree with Honors, the student may receive course credit toward the degree of Bachelor of Arts.

To be eligible for admission to an Honors program, a student must have upperclass standing and a cumulative average grade of at least 80. A student who, after admission to Honors work, fails to maintain this average or for any other reason is found by his department to be unsuited to Honors work, will revert to candidacy for the regular Bachelor of Arts degree.

SPECIAL PROGRAMS

Certain programs of study are available which do not in themselves lead to a degree but consist of an arrangement of optional courses constituting a useful adjunct to the student's regular major.

PREPARATION FOR TEACHING. Students planning to teach in the secondary schools may combine professional preparation with other prescriptions of the College in satisfaction of the requirements for graduation. A fifth year of preparation is required for the permanent certificate in New York State.

Programs for such students have been arranged in English, in speech, in foreign languages, in social studies, in science, and in mathematics. Advice should be sought early regarding teaching opportunities in these

subjects, combination of subjects usually required of teachers, choice of the major subject, and related matters.

Questions may be directed to Professor W. T. Lowe, 102 Stone Hall, and to members of the advisory committee representing the various fields of concentration. New students interested in teaching are requested to confer with Professor Lowe in their first term of residence. (See also the *Announcement of the School of Education*.)

PREMEDICAL STUDENTS. All premedical students are requested to report once each semester to Professor L. L. Barnes, 155 Rockefeller Hall, who is the chairman of the Premedical Advisory Board.

Certain minimum admissions requirements are prescribed by all medical schools. Since the most substantial of these requirements is in the field of chemistry, it is recommended that the freshman premedical student include chemistry in his course of study. Some freshman premedical students choose to take two sciences; either chemistry and zoology or chemistry and physics. Students who plan to make zoology their major subject will find it advantageous to include zoology in their freshman programs.

Medical educators are quite generally agreed that when a premedical student is planning his college course, he should not allow his interest in science to exclude studies in the humanities. They are also agreed that it would be unfortunate for the future of medicine if all premedical students were to take the same premedical course or major in the same subjects.

The Premedical Advisory Board suggests that the following be included in the first-semester program: English 111 or the equivalent (three hours), French or German (six hours), or Latin (three hours); chemistry (three hours).

MILITARY TRAINING. Programs leading to a commission are offered in military science, naval science, and aerospace studies (AFROTC). Credit for advanced courses may be counted in upperclass hours to the extent of twelve hours. Full descriptions of the programs may be found in the *Announcement of Officer Education*.

THE LIBRARIES

The central University Library, in two adjoining buildings—the Uris Undergraduate Library and the John M. Olin Research Library—is one of the chief assets of the College of Arts and Sciences. Its holdings, together with the collections in the college, school, and department libraries—housed in the various academic buildings—amount to more than 2,600,000 volumes. The library ranks seventh in number of volumes

among university libraries in the United States. To the rich resources assembled by the founders and by succeeding scholars and librarians, about 168,000 volumes are being added each year.

The library not only provides the reference and collateral reading materials necessary for the support and enrichment of teaching and research but also has extensive collections of rare books, newspapers, maps, document, manuscripts, microfilm, and microcards. Subscriptions to more than 4000 periodicals are maintained. Many of the collections in special fields are distinguished for completeness of coverage and value of individual items.

A union catalog includes the holdings of all libraries on the Ithaca campus. All books are available for use by undergraduates, although of necessity some must be used under restricted conditions.

Freshman students are scheduled for a library lecture-tour as a means of becoming familiar with the facilities and services of the library. All students, as well as the public, also enjoy a constantly changing series of exhibitions, displaying the specialized materials and treasures of the library.

HOUSING AND DINING

On the Cornell campus are residence halls for both men and women. Cafeteria and dining service is also provided in several campus buildings. Male students are not required to live in dormitories and are individually responsible for making their own living and dining arrangements. Each male candidate for admission will, however, receive a form for application to the residence halls. Housing in University residence halls can be guaranteed for freshmen who have been admitted and have filed dormitory applications by May 15.

Inquiries concerning off-campus housing should be addressed to the Off-Campus Housing Office, Day Hall.

Women undergraduate students, with few exceptions, are required to live and take their meals in dormitories or in sorority houses (for members only). Permission to live elsewhere in Ithaca is granted only under exceptional circumstances upon written application to the Dean of Students. An application form for the residence halls for undergraduate women will be sent with the notice of acceptance from the Office of Admissions, Day Hall.

Graduate students and married students should write the Department of Housing and Dining Services for information on living accommodations.

SCHOLARSHIPS AND PRIZES

New York State offers various types of financial assistance to qualified college students who are state residents. It is very important that students seeking such aid obtain full information and meet promptly each application deadline.

SCHOLAR INCENTIVE PROGRAM. Applications should be filed before July 1 for each academic year but will be accepted up to December 1. Applications for the spring semester only have an April 1 deadline. Annual application is required.

REGENTS COLLEGE SCHOLARSHIPS FOR UNDERGRADUATES. Candidates should seek directions from their high school principal and/or guidance counselor.

Information on all of the above may be obtained by writing to the Regents Examination and Scholarship Center, New York State Education Department, Albany 1, New York. Students seeking New York State guaranteed loans should apply to the New York Higher Education Assistance Corporation, 111 Washington Avenue, Albany 24, New York.

The scholarships listed *below* are open only to students of the College of Arts and Sciences. For these and others open to all students at entrance a single application form may be secured from the Office of Scholarships and Financial Aid, Day Hall. Enrolled students may compete for prizes (see *Announcement of Prize Competitions*, which may be obtained at the Visitor Information Center, Day Hall).

THE DEAN'S SCHOLARSHIPS are open to men and women entering the College of Arts and Sciences. The annual awards vary from \$100 to \$1800, depending upon financial need. The tenure is four years if the scholastic record of the recipient is creditable. At least twenty scholarships are awarded annually. January Scholastic Aptitude Test of the College Entrance Examination Board is required. Final selection and award are based upon academic promise, general character, and financial need. Preference will be given to candidates from areas not well represented in the present student body of the College of Arts and Sciences.

THE SPENCER L. ADAMS SCHOLARSHIPS (two scholarships) are open to freshman men. Annual award, \$800. Tenure is four years, providing academic standing in the upper fifth of the class is maintained. Preference will be shown to students majoring in the humanities, foreign language, or economics.

THE ELISABETH REAMER CARSON SCHOLARSHIP ENDOWMENT was established by James H. Carson and Elisabeth Reamer Carson in 1958. Elisabeth Reamer Carson graduated in 1927. The scholar-

ship is open to any student in the College. Annual award may vary from \$400 to \$1250. The scholarship may be held for four years. Financial need, academic promise, and general character will be considered in making the award.

THE GEORGE C. BOLDT MEMORIAL SCHOLARSHIPS (three scholarships) were created by George C. Boldt, Jr., as a memorial to his father. Each is worth \$500. They will be awarded at the close of the junior year to the three men students of the College who are considered most deserving of this aid. Applications for these scholarships must be filed in the Office of the Dean before March 15 of the academic year preceding the year for which they are awarded.

THE CHESTER BUCHANAN MEMORIAL SCHOLARSHIP is a gift of Mrs. Claire F. Buchanan, in memory of her son, Chester Buchanan. It carries an annual stipend of \$300. It is awarded each year on the recommendation of the Department of Geology to the outstanding male senior who is majoring in this subject.

THE CORNELIS W. de KIEWIET SCHOLARSHIP, established by members of the Board of Trustees in honor of the former Acting President of Cornell University, carries an annual award of \$500. It will be awarded to a student majoring in history who, at the end of his junior year, shows the greatest promise of creative work in history.

THE CORNELIA L. HALL SCHOLARSHIP, established by a gift of the late Mary F. Hall, is worth \$120. It is "open to any meritorious young woman of this State, who is pursuing the studies of the A.B. course and who is in need of financial assistance." Under the terms of the bequest, preference must be given to a suitable candidate from Tioga, Tompkins, or Chemung County; within this preferred class, women of senior or junior standing will be regarded as entitled to first consideration. Applications must be filed in the Office of the Dean before March 15 of the academic year preceding the year for which the scholarship is awarded.

THE GERTRUDE C. HEMINGWAY SCHOLARSHIP, amounting approximately to \$500, is awarded annually to "some deserving young woman student majoring in French, Spanish, or Greek language." Quality of work and financial need will be considered in making the award.

THE HUGUENOT SOCIETY OF AMERICA SCHOLARSHIP is open to men and women entering the College who establish with the Society their Huguenot descent. The annual award is \$400. The scholarship may be held for four years; only one is available.

THE MYRTLE H. MILLER SCHOLARSHIP is open to men and women entering the College of Arts and Sciences. Annual award varies but may be as high as \$1200. Tenure is four years. One or more scholarships are available each year. January Scholastic Aptitude Test of the College Entrance Examination Board is required. Final selection and award are based upon academic promise, proficiency in mathematics, general character, and financial need.

THE MICHAEL W. MITCHELL MEMORIAL SCHOLARSHIP, initiated by Justice William O. Douglas and a group of his associates, carries a stipend of \$350. Under the terms of this bequest, the award is made upon the recommendation of the Chairman of the Department of Geology to a "student majoring in geology who proves himself adept in other liberal arts fields as well as geology—a student of the world."

THE HENRY L. O'BRIEN, JR., SCHOLARSHIP, established by the W. Alton Jones Foundation, Inc., in 1953, as a memorial to Henry L. O'Brien, Jr., is worth \$885 a year. It is awarded to a male citizen of the United States entering the College of Arts and Sciences as a freshman. It may be retained for four years if his scholarship record is satisfactory. Character, scholastic ability, need, and participation in extracurricular activities will be considered in awarding the scholarship.

THE FREDERICK A. PEEK SCHOLARSHIP FUND is open to men and women entering this College. The annual award varies from \$100 to \$1500 according to financial need. The scholarship may be held for four years, provided the recipient maintains an average in the top half of the class. Financial need, academic promise, and general character will be considered in making the award.

THE JOHN AND CHARLOTTE E. REAMER MEMORIAL ENDOWMENT SCHOLARSHIPS are open to men and women entering this College. Annual award varies according to financial need but may be as high as \$1800. Approximately ten scholarships are available each year. The recipient may hold the scholarship for four years provided his term averages place him in the top half of his class. The January Scholastic Achievement Test of the College Entrance Examination Board is required. Final selection and award will be based upon academic promise, general character, and financial need. Preference will be accorded applicants intending to major in the humanities.

THE FREDERICK A. RICE SCHOLARSHIP ENDOWMENT scholarship is the gift of Frederick A. Rice, '09, and Mrs. Rice, and is open to men students in this College. The annual award is \$140, and the scholarship may be held for four years. Preference is given to candidates

from California. Financial need, academic promise, and general character will be considered in making the award.

THE WINTON G. ROSSITER SCHOLARSHIP, worth \$250 is awarded annually to an outstanding senior in this College, who while earning a good part of his expenses through his own efforts, has nevertheless maintained a distinguished academic record and contributed substantially to the life of the University.

THE GENERAL MOTORS SCHOLARSHIPS were established by the General Motors Corporation in 1955. They are available to freshman men or women who are citizens of the United States and are entering this College. The tenure is four years, providing the recipient maintains an average which will place him in the top half of his class term by term. Two scholarships will be available each year with a value of from \$200 to \$2000, depending on the demonstrated need of the individual. Final selection and award are based upon outstanding academic promise, general character, and financial need.

THE PROCTER AND GAMBLE SCHOLARSHIPS were established by the Procter and Gamble Fund in 1955. One of these scholarships is available each year to either men or women students entering this College. The annual award is designed to cover tuition, fees, books, and supplies. Tenure is four years, but to ensure continuance of the scholarship the recipient must maintain a term-by-term average in the top half of his class. Final selection is based upon academic promise and performance, general character, and financial need.



Cornell University

COURSES OF INSTRUCTION

AMERICAN STUDIES

Mr. David B. Davis, Chairman; Messrs. S. M. Brown, Jr., D. F. Dowd, R. H. Elias, A. Hacker, C. Rossiter, S. C. Strout, R. M. Williams, Jr.

The American Studies Committee does not offer a formal major, but seeks to encourage interdisciplinary work in the history, culture, and institutions of America. The student can find in the departments of history, philosophy, economics, English, government, and sociology, which are represented by members of the Committee, a variety of such courses dealing with American subjects. American Studies 401-402 is designed for students whose background and achievement qualify them to go beyond the limits of their major discipline in an advanced, interdisciplinary exploration of the history and meaning of American culture. To be admitted to American Studies 401-402 a student must be a senior, have a cumulative average of 85 in courses in the humanities, history, and the social sciences, and have the consent of the instructor. Application should be made to the instructor no later than one week before the pre-registration period for the desired course.

401-402. SEMINAR IN AMERICAN STUDIES

Throughout the year. Credit four hours a term. Open to specially qualified seniors with consent of the instructor. Fall term: F 2-4, Mr. Davis. Spring term: Th 2-4, Mr. Elias.

An advanced course intended to raise central questions concerning the methods and assumptions of the various disciplines and the relation of these disciplines to each other. Fall term: changing concepts of the American character—a study of images and interpretations of the American character from the early nineteenth century to the present, through an analysis of selected fiction by such writers as Cooper, Twain, James, Howells, Dreiser, Anderson, Lewis, and Fitzgerald, and of commentaries by

Tocqueville and modern social scientists. Spring term: the 1920's; the status of the individual as seen in the decade's economy, politics, family relations, justice, literature, fine arts, and philosophy; readings in Veblen, Hoover, J. B. Watson, Hemingway, and Dewey, among others.

ANTHROPOLOGY

Mr. A. R. Holmberg, Chairman; Messrs. R. Ascher, H. F. Dobyns, M. Freedman, C. F. Hockett, K. A. R. Kennedy, B. Lambert, W. W. Lambert, A. H. Leighton, Mrs. Dorothea C. Leighton, Messrs. T. F. Lynch, M. E. Opler, J. M. Roberts, L. Sharp, J. T. Siegel, G. W. Skinner, R. J. Smith, V. W. Turner, A. P. Wolf, F. W. Young.

Two majors are offered by the Department: (1) a major in anthropology, and (2) a major in social relations.

ANTHROPOLOGY

For admission to the major in anthropology a student should have taken Anthropology 101 and 102. Students admitted to the major without having taken Anthropology 101 and 102 must take Anthropology 301, which will not count toward the total hours in the major.

The student majoring in anthropology is required to take thirty-two hours in anthropology, chosen from among courses at the 300 level or higher. Of these thirty-two hours, at least eight hours must be taken at the 400 level or higher. The specific program of courses is designed for the individual student in consultation with his major adviser.

Students seeking admission to the Department's Honors program should file application on a form obtainable in the departmental office, not later than February 15 of their junior year. Honors candidates must have a general average of at least 80 and an average in departmental courses of at least 85, or show exceptional promise. Honors students may fulfill part or all of their 400-level requirements by means of the Honors Seminar.

Specialized instruction is offered in Anthropology 497-498 (Topics in Anthropology). Such study is open to a strictly limited number of upper-classmen.

Attention of students is directed to the course offerings in linguistics, in which subjects closely related to general anthropology are treated.

The Department has adopted the following code with regard to the second digit in anthropology course numbers: 0 (as in 301), survey and general courses; 1 (as in 312), anthropological theory and method; 2, topical/comparative ethnology courses; 3, ethnographic surveys; 4, courses in complex societies; 5, archeology; 6, linguistics; 7, physical anthropology; 8, applied anthropology.

The Distribution I requirement in Social Sciences is met in anthropology by Anthropology 101 and 102; or 101 and any 200-level anthropology course; or 102 and any 200-level anthropology course.

SOCIAL RELATIONS

The major in social relations is offered jointly by the Department of Anthropology and the Department of Sociology. The major provides the student with basic competence in cultural anthropology, social psychology, and sociology, while giving particular emphasis to the common methods of research in these disciplines. The student electing this major is expected to obtain a grasp of the common interests and evidence of these disciplines as well as knowledge of their unique insights in attempting to develop generalizations regarding man in society. The student's work is integrated in his senior year when he takes the Social Relations Seminar in which he is expected to interrelate aspects of the theory and data of the three disciplines.

(1) Prerequisites to the major: The candidate must apply to the Committee on Admission to the Social Relations Major, offering the following:

- a. Either Anthropology 101 or Sociology 101.
- b. Either Psychology 101 or Psychology 346 (Theories of Personality).
- c. Either Industrial and Labor Relations 210 or Psychology 201 (the latter is recommended for the student who intends to take advanced courses in psychology).

(2) The major. The major calls for a minimum of 36 hours of course work as follows:

- a. Three pairs or other combinations of related courses at the 300 level or above, to be selected in consultation with the major adviser. These six courses must include two from each of the following disciplines: anthropology, social psychology, sociology.
- b. At least one course in methods, to be selected from the following: anthropological methods, techniques of experimentation (psychology), methods in sociology, advanced psychological statistics, the philosophy of science or of social science, advanced statistics (such as Industrial and Labor Relations 510).
- c. At least one course in theory which is related to social relations.
- d. The senior seminar in social relations (Sociology 495 or Anthropology 495).

A list of the courses which may be used to satisfy the requirements for the major in social relations is available from any of the major advisers.

Students seeking admission to the Honors program in social relations should apply to the chairman of the Social Relations Committee, Robin M. Williams, Jr.

101. INTRODUCTION TO CULTURAL ANTHROPOLOGY

Either term. Credit three hours. Fall and spring term, lectures M W (F) at 10. Discussion sections arranged. Fall term, Mr. Smith. Spring term, Mr. Wolf.

A comparative study of the organization of cultural behavior in systems of communications, technology, social relations, ritual, ideas, and sentiments; the relation of such systems to personal behavior and to continuity, change, and cultural transfer in history. Illustrative materials drawn largely from non-Western societies.

102. THE EVOLUTION OF MAN

Spring term. Credit three hours. Lectures T Th (S) 11. Discussion sections arranged. Mr. Ascher.

An exploration of the archeological and fossil record of human evolution; emphasis is on the varied ways of uncovering, interpreting, and understanding man's biological and cultural development from the origin of man to the rise of civilization.

[202. ANTHROPOLOGY IN THE MODERN WORLD

Spring term. Credit three hours. T Th S 9. Mr. Holmberg. Not offered in 1965-1966.]

[232. INDIANS OF THE AMERICAS

Spring term. Credit three hours. M W F 9. Mr. Smith. Not offered in 1965-1966.]

[241. CIVILIZATIONS OF EAST ASIA

Fall term. Credit three hours. T Th S 9. Mr. Skinner. Not offered in 1965-1966.]

265. CULTURE AND PERSONALITY

Fall term. Credit three hours. M W F 11. Mr. Wolf.

The study of the individual in his society emphasizing the relationship between social structure, cultural context, and human behavior. Attention is given largely to the study of personality, "normal" and "abnormal," in non-Western societies.

272. LIVING RACES OF MAN

Spring term. Credit three hours. M W F 9. Mr. Kennedy.

A survey of the major features of human biological variation relevant to the study of phenotypic characteristics, racial histories, classification, and the evolutionary interpretations of population differences.

Courses for Upperclassmen and Graduate Students

The first four courses listed in this group are general courses in the major subfields of anthropology.

301. CULTURAL ANTHROPOLOGY

Fall term. Credit four hours. M W F 12. Mr. Sharp.

A study and comparison of the types of learned, shared, and transmitted behavior patterns and ideas by means of which men of various periods and places have dealt with their environment, worked out their social relations with their fellow men, and defined their place in the cosmos. An inquiry into human nature and its expression in man's institutional and intellectual creations.

303. PREHISTORIC ARCHEOLOGY

Fall term. Credit four hours. T Th S 11. Mr. Lynch.

A study of Old World prehistory from the origins of culture in the Paleolithic through the beginnings of civilization.

GENERAL LINGUISTICS

(See Linguistics 301.)

304. PHYSICAL ANTHROPOLOGY

Spring term. Credit four hours. M W F 11. Mr. Kennedy.

A survey of the evolutionary history of man as interpreted from comparative

primate anatomy, primatology, and the fossil record, with particular attention to human phylogeny.

312. CONTEMPORARY ANTHROPOLOGICAL THEORY

Spring term. Credit four hours. M W F 2. Mr. B. Lambert.

A survey of the principal approaches employed by present-day anthropologists as they seek to understand human society and culture. Applications of psychological and sociological theory to anthropological problems will be considered.

314. COMPARATIVE SOCIAL SYSTEMS

Spring term. Credit four hours. M W F 3. Mr. Turner.

The topics dealt with will include the comparative study of systems of kinship, politics, religion and magic in preliterate societies and the relationship between these types of system in particular societies. They will further include age and sex differentiation; age-sets and age-grades; division of labor, types of specialization, occupational associations; rank and occupation; social classes, caste, slavery, pawnship and serfdom; secret associations; social networks and social mobility. References will also be made to theories concerning them.

316. ARCHEOLOGY OF THE AMERICAS

Spring term. Credit four hours. M W F 2. Mr. Lynch.

A study of New World prehistory from initial peopling to European colonization.

317. KINSHIP AND SOCIAL ORGANIZATION

Fall term. Credit four hours. M W F 11. Mr. Freedman.

The development of kinship studies, analysis of the family, unilineal and bilateral systems of kinship, marriage. The study of kinship terminology. Kinship in small-scale and complex societies. Political, economic, and religious aspects of kinship organization.

[324. ART AND CULTURE

Spring term. Credit four hours. M W F 2. Not offered in 1965-1966.]

326. COMPARATIVE ECONOMIC BEHAVIOR

Spring term. Credit four hours. T Th S 10. Mr. Siegel.

A comparative survey of the social organization of production, exchange, and consumption of goods in tribal and peasant societies. Attention is also focused on problems of economic development in non-Western societies.

[327. CONSTANTS AND VARIANTS IN CULTURE

Fall term. Credit four hours. M W F 2. Mr. Roberts. Not offered in 1965-1966.]

331. ETHNOLOGY OF NORTH AMERICA

Fall term. Credit four hours. Prerequisite, Anthropology 101 or 301, or consent of instructor. M W F 3. Mr. Roberts.

A general survey of the ethnography of North America, with emphasis on problems and topics to which the North American materials are most relevant. Selected cultures will be considered in some detail.

332. ETHNOLOGY OF MIDDLE AND SOUTH AMERICA

Spring term. Credit four hours. Prerequisite, Anthropology 101 or 301, or consent of instructor. M W F 9. Mr. Holmberg.

A descriptive and analytical survey of contemporary native cultures of Middle and South America in terms of economic, social, political, and religious organization. Representative groups from all cultural areas are considered, ranging from such marginal peoples as the Tierra del Fuegians to such complex civilizations as the Inca.

334. ETHNOLOGY OF SOUTHEAST ASIA

Spring term. Credit four hours. Prerequisite, Anthropology 101 or 301, or consent of instructor. T Th 2:30-4. Mr. Sharp.

The development and distribution of major sociocultural systems in mainland and island Southeast Asia. Discussion of selected groups and of the fate of traditional cultural characteristics following the expansion of Chinese, Indian, Moslem, and Western civilizations into these areas.

337. ETHNOLOGY OF AFRICA

Fall term. Credit four hours. Prerequisite, Anthropology 101 or 301, or consent of instructor. T Th S 9. Mr. Turner.

A social and cultural survey of representative African peoples. Stress is laid on the comparative study of political institutions and local descent groups. Ritual beliefs and practices are considered in relation to repetitive and radical change.

341. CULTURE AND SOCIETY IN INDIA AND SOUTH ASIA

Fall term. Credit four hours. M W F 10. Mr. Opler.

A survey of the social, economic, political, and religious institutions of India and other countries of South Asia. Both the traditional cultures and the changes which are taking place are considered.

[343. CHINESE CULTURE AND SOCIETY

Fall term. Credit four hours. Prerequisite, Anthropology 101 or 301, or consent of instructor. T Th S 10. Mr. Skinner. Not offered in 1965-1966.]

345. JAPANESE CULTURE AND SOCIETY

Fall term. Credit four hours. Prerequisite, Anthropology 101 or 301, or consent of instructor. M W F 9. Mr. Smith.

A survey of the social structure of Japan and a discussion of trends in urban and rural life during the past century. Attention will also be devoted to the historical development and present social context of the graphic arts, literature, music, and the drama.

347. ETHNOLOGY OF OCEANIA

Fall term. Credit four hours. Prerequisite, Anthropology 101 or 301, or consent of instructor. M W F 2. Mr. B. Lambert.

A survey of the native cultures of Polynesia, Micronesia, Melanesia, and Australia, with emphasis on topics of general interest to social anthropologists. The settlement and prehistory of the area will also be discussed.

371. PHYSICAL ANTHROPOLOGY LABORATORY

Fall term. Credit four hours. Prerequisite, Anthropology 102, 272, or 304; Zoology 101-102, 103-104, 201, 365; or consent of instructor. W F 3-5. Mr. Kennedy.

Methodology of field and laboratory analyses of human biological variation. Practical exercises in the techniques of anthropometry, serology, comparative primate anatomy, growth studies, and the interpretation of the hominid fossil record.

[411. METHODS IN ANTHROPOLOGY

Fall term. Credit four hours. M W F 2. Not offered in 1965-66.]

[413. THEORY OF CULTURE CHANGE

Fall term. Credit four hours. Prerequisite, Anthropology 101 or 301, or consent of instructor. M W F 11. Mr. Holmberg. Not offered in 1965-1966.]

[422. ANTHROPOLOGY AND MEDICINE

Spring term. Credit four hours. Prerequisite, Anthropology 101 or 301, or consent of instructor. Hours to be arranged. Mrs. Leighton. Not offered in 1965-1966.]

424. COMPARATIVE RELIGIOUS SYSTEMS

Spring term. Credit four hours. Prerequisite, an introductory course in cultural anthropology, psychology, or philosophy; or sociology of religion; or consent of instructor. M W F 10. Mr. Opler.

A comparative study of religious thought and behavior emphasizing the religious beliefs and systems of non-literate and non-Western peoples. Topics covered include ritual, religious symbolism, mythology, animism, magic, divination, witchcraft, sacrifice, possession, totemism, asceticism, shamanism, priesthood, conceptions of the afterlife, revivalism, and messianic and syncretic cults. Special attention is given to theories of the origin, development, and functions of religion and to the manner and extent to which cultural values and world view become involved with the religious system.

426. CONTENT OF CULTURE

Spring term. Credit four hours. Hours to be arranged. Mr. Roberts.

Attention is given to the description and management of the informational resource known as culture with a view to developing a theory of culture content. Codes, models, and inventories are given specific attention.

428. COMPARATIVE POLITICAL AND LEGAL ORGANIZATION

Spring term. Credit four hours. M W F 11. Mr. Roberts.

A survey of the fields of primitive government and law. Selected governmental and legal systems will be compared in terms of relevant anthropological theories and problems.

[442. SEMINAR: COMPARATIVE SOCIAL ORGANIZATION OF
COMPLEX SOCIETIES

Spring term. Credit four hours. Prerequisite, Anthropology 314, or consent of instructor. Th 2-4. Mr. Skinner. Not offered in 1965-1966.]

444. SEMINAR: CHINESE CULTURE AND SOCIAL STRUCTURE

Fall term. Credit four hours. Prerequisite, Anthropology 314 or 343, or consent of instructor. Hours to be arranged. Messrs. Freedman and Wolf.

Selected problems in the analysis of Chinese cultural and social systems. In 1965-1966, the seminar will be concerned primarily with problems in the analysis of religion and ritual, but an opportunity will be provided to consider recent work of a more general character. The material used will be drawn from both China and the overseas Chinese.

452. INTERPRETIVE ARCHEOLOGY

Spring term. Credit four hours. Prerequisite, Anthropology 102 or 303 or 316, or consent of instructor. Th 2-4. Laboratory work arranged. Mr. Ascher.

A study of archeological theory and procedures emphasizing the reconstruction of man's past and the logic of archeological inference.

461. ETHNOLINGUISTICS

Fall term. Credit four hours. Prerequisites, Anthropology 101 or 301 and Linguistics 201 or 301, or consent of instructor. W 2-4. Mr. Hockett.

A survey of problems and findings in the interrelations of language and culture.

482. APPLIED ANTHROPOLOGY

Spring term. Credit four hours. T 2-4. Prerequisite, consent of instructor. Mr. Dobyns.

The principles of anthropology applied to planned programs of change. Designed not only for students of the humanities and different societies but also for natural scientists concerned with social and cultural problems involved in technological change, community development, native administration, and modernization in various regions of the world. The seminar is designed especially to prepare advanced undergraduate and graduate students for technical missions abroad.

491-492. HONORS SEMINAR

Throughout the year. Credit four hours. Hours to be arranged. Mr. Ascher.

495. SOCIAL RELATIONS SEMINAR

Fall term. Credit four hours. Open only to seniors majoring in social relations. Hours to be arranged.

497-498. TOPICS IN ANTHROPOLOGY

Throughout the year. Credit two or four hours. Staff.

Graduate Seminars

515. ANTHROPOLOGICAL THEORY

Fall term. Credit four hours. Th 4-6. Mr. Opler.

A systematic treatment of schools of thought in anthropology (historical, structural-functional, evolutionary, etc.), of principal concepts developed by the discipline, and of important figures who have contributed to anthropological theory. The relation of concepts which appear in anthropological theory to the general history of thought is constantly probed in an effort to understand both how ideology in anthropology has been influenced by developments in other disciplines and what anthropology has contributed to the main stream of ideas since its emergence as a distinct field of inquiry.

518. METHODS IN ANTHROPOLOGY

Spring term. Credit four hours. Th 4-6. Mr. Wolf.

A study of the methodological problems entailed in the planning and execution of empirical research in cultural anthropology. The emphasis is on the translation of hypotheses into workable research design and strategy.

CROSS-CULTURAL RESEARCH METHODS

(See Rural Sociology 516, College of Agriculture.)

520. CURRENT BRITISH AND FRENCH ANTHROPOLOGY

Spring term. Credit four hours. F 4-6. Mr. Turner.

A survey and critique of major current trends in British and French anthropology. Special attention is paid to the work of such representative figures as Levi-Strauss, Leach, Fortes, Firth, and Gluckman and the types of research they have fostered.

522. KINSHIP AND DESCENT

Spring term. Credit four hours. T 4-6. Mr. B. Lambert.

A comparative study of the functions of descent groups and of the interpersonal relations of natural and fictive kinsmen will be undertaken, with the object of determining some of the causes of variation in these aspects of social structure. Particular emphasis will be placed on cognatic societies.

523. RELIGIOUS SYSTEMS

Fall term. Credit four hours. F 4-6. Mr. Siegel.

This year selected social, cultural, and religious aspects of Islam will be considered.

524. ART AND CULTURE

Spring term. Credit four hours. W 4-6. Mr. Smith.

A comparative study of the arts of primitive and peasant peoples, emphasizing the applied and graphic arts, but dealing also with dance, drama, and music. Emphasis on contemporary native cultures and the influence on the traditional arts of contact with civilized peoples.

541. MIDDLE AND SOUTH AMERICA

Fall term. Credit four hours. Prerequisite, consent of instructor. T 4-6. Mr. Holmberg.

An analysis of the economic, social, political, and ideological aspects of contemporary Latin American culture in relation to current trends of change and modernization.

[546. COMPARATIVE SOCIAL RESEARCH ON CHINA AND JAPAN

Spring term. Credit four hours. Th 2-4. Messrs. Skinner and Smith. Not offered in 1965-1966.]

548. SOUTHEAST ASIA

Spring term. Credit four hours. M 4-6. Mr. Sharp.

Selected cultural problems of the region will be studied comparatively and historically.

551. AGRICULTURE AND CIVILIZATION

Fall term. Credit four hours. W 4-6. Mr. Lynch.

The development of agriculturally based civilizations in the Americas.

[571. BIOCULTURAL EVOLUTION

Fall term. Credit four hours. Hours to be arranged. Mr. Ascher. Not offered in 1965-1966.]

573. HISTORY AND THEORY OF PHYSICAL ANTHROPOLOGY

Fall term. Credit four hours. M 4-6. Mr. Kennedy.

A study of the intellectual background of such topical problems as adaptation, variation, natural selection, morphological description, etc. Also readings from original

sources by Buffon, Blumenbach, Darwin, de Quatrefages, M. Boule and current scholars.

615-616. DIRECTED RESEARCH

Throughout the year. Credit to be arranged. Hours to be arranged. Staff.

617-618. FIELD RESEARCH

Throughout the year. Credit to be arranged. Staff.

Field research seminars are conducted in the United States, Canada, Peru, India, Southeast Asia, Taiwan, Japan, and other areas for a limited number for adequately prepared students.

ASIAN STUDIES

Mr. R. J. Smith, Chairman; Messrs. L. P. Adams, D. E. Ashford, A. C. Atwell, K. Biggerstaff, N. C. Bodman, J. G. Bordie, H. R. Capener, A. T. Dotson, J. M. Echols, G. H. Fairbanks, H. Feldman, M. Freedman, J. W. Gair, F. H. Golay, D. G. E. Hall, M. Hugo-Brunt, R. B. Jones, Jr., G. McT. Kahin, G. B. Kelley, K. A. R. Kennedy, J. W. Lewis, T. C. Liu, N. G. M. Luykx II, R. M. Marsh, Miss Ruth McVey, Messrs. W. J. McCoy, J. W. Mellor, Miss Harriet C. Mills, Messrs. S. J. O'Connor, M. E. Opler, R. A. Polson, H. Shadick, L. Sharp, J. T. Siegel, G. W. Skinner, A. P. Wolf, J. U. Wolff, O. W. Wolters, M. W. Young.

The applicant for admission to the major in Asian Studies must have completed at least one course selected from among those listed under the Department of Asian Studies and must be recommended by the instructor in charge of that course. He must have received a minimum grade of 75 in this and in all other courses taken in the Department.

The candidate for the B.A. with a major in Asian Studies is required to complete at least eighteen hours in one of the Asian languages offered at Cornell. The major consists of at least thirty additional hours (which may include further language work), selected by the student in consultation with his adviser, from among the courses listed under the Department of Asian Studies numbered 300 and over. Majors normally concentrate in one of the following areas: China, Japan, South Asia, Southeast Asia.

The candidate for Honors must maintain a cumulative average of 85 in courses in the humanities and social sciences. He must also maintain an average of 85 in courses in the Department. In his senior year, the Honors candidate will take a two-term graduate seminar selected from among those listed below in consultation with his adviser, normally taking a seminar relating to the area in which his studies have been concentrated.

The Honors candidate will also take the Honors Course (Asian Studies 401) in which he writes his Honors paper. He may wish to enroll in Asian Studies 402 in the spring semester of his senior year, but that course is not required of him. At the end of his junior year, the student should consult with the professor with whom he plans to write his paper to obtain permission to register for the Honors course. There will be a comprehensive written examination in May of his senior year, administered by the supervisor of his Honors work.

Asia, General

[CIVILIZATIONS OF EAST ASIA

Fall term. T Th S 9. Mr. Skinner. (See Anthropology 241.) Not offered in 1965-1966.]

ECONOMICS OF AGRICULTURAL DEVELOPMENT

Spring term. T Th S 9. Mr. Mellor. (See Agricultural Economics 364, College of Agriculture.)

SEMINAR ON THE ECONOMICS OF TROPICAL AGRICULTURE

Spring term. Hours to be arranged. Mr. Poleman. (See Agricultural Economics 667, College of Agriculture.)

[COMPARATIVE ECONOMIC SYSTEMS: JAPAN, INDIA, CHINA

Spring term. M W F 9. Mr. Golay. (See Economics 365.) Not offered in 1965-1966.]

[PUBLIC POLICY AND ECONOMIC DEVELOPMENT

Fall term. M W F 9. Mr. Golay. (See Economics 371.) Not offered in 1965-1966.]

THE UNITED STATES AND ASIA

Fall term. M W F 2. Mr. Kahin. (See Government 377.)

SEMINAR IN THE INTERNATIONAL RELATIONS OF ASIA

Fall term. Hours to be arranged. Mr. Kahin. (See Government 577.)

[STUDIES IN ASIAN ART

Spring term. Hours to be arranged. Mr. Atwell. (See Art 353, College of Architecture.) Not offered in 1965-1966.]

INTRODUCTION TO ASIAN ART

Fall term. M W F 10. Mr. O'Connor. (See History of Art 281.)

[ART OF INDIA AND SOUTHEAST ASIA

Spring term. M W F 11. Mr. Young. (See History of Art 386.) Not offered in 1965-1966.]

[METHODS OF RESEARCH IN ASIAN ART

Fall term. T 2-4:30. Mr. Young. (See History of Art 483.) Not offered in 1965-1966.]

[PROBLEMS IN ASIAN ART

Spring term. T 2-4:30. Mr. Young. (See History of Art 484.) Not offered in 1965-1966.]

THE FAR EAST

Either term. M W F 9. Mr. Hugo-Brunet. (See Arch. 435, College of Architecture.)

COMPARATIVE RURAL SOCIETIES

Fall term. M W F 11. Mr. Polson. (See Rural Sociology 420, College of Agriculture.)

401. ASIAN STUDIES HONORS COURSE

Fall term. Credit four hours a term. Staff.

This course, in which the student writes an Honors essay, is required of every Honors student in his senior year. It is normally taken with the student's major adviser.

402. ASIAN STUDIES DIRECTED READING

Spring term. Credit two hours a term. Staff.

This course, which is open only to majors in the Department in their senior year, provides the student with the opportunity to read intensively in a selected area under the direction of a member of the staff.

591-592. SEMINAR: FIELD RESEARCH

Throughout the year. Staff.

Field research seminars for selected advanced students are conducted in South Asia, Southeast Asia, Hong Kong, Taiwan, or Japan by staff members who are themselves working in these areas.

China

AREA COURSES

[CHINESE CULTURE AND SOCIETY

Fall term. T Th S 10. Mr. Skinner. (See Anthropology 343.) Not offered in 1965-1966.]

SEMINAR: CHINESE CULTURE AND SOCIAL STRUCTURE

Fall term. M 3-5. Messrs. Freedman and Wolf. (See Anthropology 444.)

CHINESE GOVERNMENT AND POLITICS

Fall term. M W F 10. Mr. Lewis. (See Government 347.)

THE FOREIGN POLICY OF CHINA

Fall term. M W F 8. Mr. Lewis. (See Government 478.)

SEMINAR IN THE POLITICS OF CHINA

Spring term. Hours to be arranged. Mr. Lewis. (See Government 547.)

[SEMINAR IN THE FOREIGN POLICY OF CHINA

Fall term. Hours to be arranged. Mr. Lewis. (See Government 583.) Not offered in 1965-1966.]

HISTORY OF CHINESE CIVILIZATION PRIOR TO THE NINETEENTH CENTURY

Fall term. M W F 12. Mr. Biggerstaff. (See History 323.)

HISTORY OF CHINESE CIVILIZATION: NINETEENTH AND TWENTIETH CENTURIES

Spring term. M W F 12. Mr. Biggerstaff. (See History 324.)

MODERNIZATION OF CHINA

Throughout the year. M 4-6. Mr. Biggerstaff. (See History 491-492.)

SEMINAR IN MODERN CHINESE HISTORY

One or two terms. Hours to be arranged. Mr. Biggerstaff. (See History 691-692.)

ART OF CHINA

Fall term. M W F 11. Mr. Young. (See History of Art 383.)

[CHINESE PAINTING: THE FIRST MILLENNIUM

Fall term. T 2-4:30. Mr. Young. (See History of Art 485.) Not offered in 1965-1966.]

[CHINESE PAINTING: THE LATER CENTURIES

Spring term. T 2-4:30. Mr. Young. (See History of Art 486.) Not offered in 1965-1966.]

HISTORY OF THE CHINESE LANGUAGE

(See Chinese 402.)

LINGUISTIC STRUCTURE OF CHINESE

(See Chinese 403.)

SINO-TIBETAN LINGUISTICS

Throughout the year. Hours to be arranged. Mr. Bodman. (See Linguistics 581-582.)

CHINESE LITERATURE IN TRANSLATION: HISTORICAL AND PHILOSOPHICAL

Fall term. M W F 10. Mr. Shadick. (See Literature 321.)

[CHINESE LITERATURE IN TRANSLATION: POETRY, FICTION, DRAMA

Spring term. M W F 10. Mr. Shadick. (See Literature 322.) Not offered in 1965-1966.]

SEMINAR: THEORY AND RESEARCH IN CHINESE SOCIAL STRUCTURE

Spring term. Hours to be arranged. Mr. Marsh. (See Sociology 614.)

Other courses dealing extensively with China are Anthropology 241, 546; Economics 365, 371; Government 377; History of Art 381.

LANGUAGE COURSES

ELEMENTARY CHINESE

(See Chinese 101-102.)

INTERMEDIATE CHINESE I

(See Chinese 201-202.)

INTRODUCTION TO CLASSICAL CHINESE

(See Chinese 213.)

ELEMENTARY HOKKIEN CHINESE

(See Chinese 221-222.)

INTERMEDIATE CHINESE II

(See Chinese 301-302.)

INTERMEDIATE CLASSICAL CHINESE

(See Chinese 312.)

CHINESE HISTORICAL AND PHILOSOPHICAL TEXTS

(See Chinese 313.)

ADVANCED READINGS IN MODERN CHINESE

(See Chinese 411-412.)

CLASSICAL CHINESE PROSE

(See Chinese 414.)

[CLASSICAL CHINESE POETRY AND DRAMA

(See Chinese 416.) Not offered in 1965-1966.]

READINGS IN THE TRADITIONAL CHINESE NOVEL

Either spring or fall term, according to demand. Credit two or four hours. Hours to be arranged. (See Chinese 420.)

ADVANCED READINGS IN CLASSICAL CHINESE

Throughout the year. Credit two or four hours. Hours to be arranged. (See Chinese 521-522.)

SEMINAR IN CHINESE LITERATURE

(See Chinese 571-572.)

Japan

AREA COURSES

JAPANESE CULTURE AND SOCIETY

Fall term. M W F 9. Mr. Smith. (See Anthropology 345.)

ART OF JAPAN

Spring term. M W F 11. Mr. Young. (See History of Art 384.)

Other courses dealing extensively with Japan are Anthropology 241 and Economics 365.

LANGUAGE COURSES

ELEMENTARY JAPANESE

(See Japanese 101-102.)

JAPANESE READING

(See Japanese 201-202.)

JAPANESE COMPOSITION AND CONVERSATION

(See Japanese 203-204.)

SELECTED READINGS IN JAPANESE

(See Japanese 301-302.)

INTRODUCTION TO CLASSICAL JAPANESE

(See Japanese 305-306.)

South Asia

AREA COURSES

CULTURE AND SOCIETY IN INDIA AND SOUTH ASIA

Fall term. M W F 10. Mr. Opler. (See Anthropology 341.)

SEMINAR: THE AGRICULTURAL DEVELOPMENT OF SOUTH ASIA

Spring term. Hours to be arranged. Mr. Mellor. (See Agricultural Economics 664, College of Agriculture.)

Other courses dealing extensively with South Asia are Agricultural Economics 364, 667 (Agr.); Art 353; Business and Public Administration 661-662; Child Development 162 (H.E.); Economics 365, 371; Government 338, 343, 377, 525, 577; History of Art 381, 386, 483, 484; and Rural Sociology 300, 432, 528 (Agr.).

HISTORY OF HINDI

Fall term in alternate years. Hours to be arranged. Mr. Fairbanks. (See Hindi 401.)

SEMINAR IN HINDI LINGUISTICS

(See Hindi 600.)

INDIA AS A LINGUISTIC AREA

Fall term in alternate years. Messrs. Fairbanks, Gair and Kelley. Hours to be arranged. (See Linguistics 331.)

INDO-ARYAN STRUCTURES

Spring term in alternate years. Hours to be arranged. (See Linguistics 432.)

COMPARATIVE INDO-EUROPEAN LINGUISTICS

Throughout the year in alternate years. Hours to be arranged. Mr. Fairbanks. (See Linguistics 521-522.)

ELEMENTARY PALI

Either term as needed. Hours to be arranged. Mr. Fairbanks. (See Linguistics 530.)

ELEMENTARY SANSKRIT

Throughout the year in alternate years. Hours to be arranged. Mr. Fairbanks. (See Linguistics 531-532.)

COMPARATIVE INDO-ARYAN LINGUISTICS

Spring term in alternate years. Hours to be arranged. Mr. Fairbanks. (See Linguistics 534.)

SEMINAR: SOUTH ASIAN LINGUISTICS

Either term. Hours to be arranged. (See Linguistics 600.)

ELEMENTARY SINHALESE

(See Sinhalese 101-102.)

ELEMENTARY TELUGU

(See Telugu 101-102.)

ELEMENTARY URDU

(See Urdu 101-102.)

DRAVIDIAN STRUCTURES

Spring term in alternate years. Hours to be arranged. Mr. Kelley. (See Linguistics 436.)

COMPARATIVE DRAVIDIAN

Spring term in alternate years. Hours to be arranged. Mr. Kelley. (See Linguistics 536.)

LANGUAGE COURSES

ELEMENTARY HINDI

(See Hindi 101-102.)

HINDI READING

(See Hindi 201-202.)

HINDI COMPOSITION AND CONVERSATION

(See Hindi 203-204.)

READINGS IN HINDI LITERATURE

(See Hindi 301-302.)

ADVANCED HINDI COMPOSITION AND CONVERSATION

(See Hindi 303-304.)

ADVANCED HINDI READING

(See Hindi 305-306.)

Southeast Asia

AREA COURSES

ETHNOLOGY OF SOUTHEAST ASIA

Spring term. T Th 2:30-4. Messrs. Sharp and Siegel. (See Anthropology 334.)

SEMINAR: RELIGIOUS SYSTEMS

Fall term. Credit four hours. F 4-6. Mr. Siegel.

This year selected social, cultural, and religious aspects of Islam are considered.

SEMINAR: SOUTHEAST ASIA ANTHROPOLOGY

Spring term. M 4-6. Mr. Sharp. (See Anthropology 548.)

[SEMINAR: ECONOMIC GROWTH IN SOUTHEAST ASIA

Fall term. Hours to be arranged. Mr. Golay. (See Economics 675.) Not offered in 1965-1966.]

SOUTHEAST ASIAN ART AND ARCHEOLOGY

Spring term. F 2-4:30. Mr. O'Connor (See History of Art 488.)

GOVERNMENTS AND POLITICS OF SOUTHEAST ASIA

Spring term. M W F 2-3:30. (See Government 344.)

SEMINAR IN POLITICAL PROBLEMS OF SOUTHEAST ASIA

Spring term. Hours to be arranged. Mr. Kahin. (See Government 644.)

SOUTHEAST ASIAN HISTORY TO THE FOURTEENTH CENTURY

Fall term. T Th S 11. Mr. Wolters. (See History 495.)

SOUTHEAST ASIAN HISTORY FROM THE FIFTEENTH CENTURY

Spring term. T Th S 11. Mr. Wolters. (See History 496.)

SEMINAR IN SOUTHEAST ASIAN HISTORY

One or two terms. Hours to be arranged. Mr. Wolters. (See History 695-696.)

THE ARCHITECTURE AND TOWN PLANNING OF SOUTHEAST ASIA

Number and hours to be announced. Mr. Hugo-Brunt. (College of Architecture.)

LINGUISTIC STRUCTURE OF INDONESIAN

(See Indonesian 403.)

SEMINAR: SOUTHEAST ASIAN LINGUISTICS

Throughout the year. Hours to be arranged. Mr. Jones. (See Linguistics 571-572.)

[SEMINAR: MALAYO-POLYNESIAN LINGUISTICS

Fall term. Hours to be arranged. Mr. Wolff. (See Linguistics 573.) Not offered in 1965-1966.]

SOUTHEAST ASIAN LITERATURE IN TRANSLATION

Fall term. T 2-4. Mr. Echols. (See Literature 318.)

501-502. SOUTHEAST ASIA

Throughout the year. F 4-6, or to be arranged. Staff.

A graduate-level survey of the cultures and history of Southeast Asia covering the pre-European, colonial, and postcolonial periods, but with particular emphasis on post-war developments and contemporary problems. Will occasionally focus on a problem common to the area as a whole, but usually deals with a different country of Southeast Asia each term. Fall term, 1965: Dr. Ruth T. McVey, Communism in Southeast Asia. Spring term, 1966: Dr. D. G. E. Hall, Burma.

Other courses dealing extensively with Southeast Asia are Anthropology 241; Art 353 (Arch.); Economics 371; Government 377, 577; History of Art 381, 386, 483, 484; Rural Sociology 420, 528; Agricultural Economics 630, 668 (Agr.).

LANGUAGE COURSES

ELEMENTARY BURMESE

(See Burmese 101-102.)

BURMESE READING

(See Burmese 201-202.)

BURMESE COMPOSITION AND CONVERSATION

(See Burmese 203-204.)

ADVANCED BURMESE READING

(See Burmese 301-302.)

ELEMENTARY CEBUANO (BISAYAN)

(See Cebuano 101-102.)

ELEMENTARY INDONESIAN

(See Indonesian 101-102.)

INDONESIAN READING

(See Indonesian 201-202.)

INDONESIAN COMPOSITION AND CONVERSATION

(See Indonesian 203-204.)

READINGS IN INDONESIAN AND MALAY

(See Indonesian 301-302.)

ADVANCED INDONESIAN CONVERSATION AND COMPOSITION

(See Indonesian 303.)

ADVANCED READINGS IN INDONESIAN AND MALAY
LITERATURE

(See Indonesian 305.)

ELEMENTARY JAVANESE

(See Javanese 221-222.)

[INTERMEDIATE JAVANESE

(See Javanese 223-224.) Not offered in 1965-1966.]

ELEMENTARY TAGALOG

(See Tagalog 101-102.)

ELEMENTARY THAI

(See Thai 101-102.)

THAI READING

(See Thai 201-202.)

THAI COMPOSITION AND CONVERSATION

(See Thai 203-204.)

ADVANCED THAI

(See Thai 301-302.)

THAI LITERATURE

(See Thai 305-306.)

ELEMENTARY VIETNAMESE

(See Vietnamese 101-102.)

VIETNAMESE READING

(See Vietnamese 201-202.)

VIETNAMESE COMPOSITION AND CONVERSATION

(See Vietnamese 203-204.)

ADVANCED VIETNAMESE

(See Vietnamese 301-302.)

VIETNAMESE LITERATURE

(See Vietnamese 305-306.)

ASTRONOMY

Mr. T. Gold, Chairman; Messrs. W. I. Axford, M. H. Cohen, F. D. Drake, M. O. Harwit, E. E. Salpeter, R. W. Shaw.

For a major in astronomy the following courses must be completed: (1) in astronomy, Courses 201-202, twelve hours of interpretational astronomy, four hours of observational astronomy, eight hours of departmental electives; (2) in related subjects, at least sixteen hours at the 300 level or above selected from approved courses in chemistry, geology, mathematics (exclusive of the calculus), and physics. Students who anticipate a major in astronomy should complete Astronomy 201-202 and the calculus not later than the sophomore year. Graduate students must register with the instructor in charge of the desired course on regular registration days at the beginning of each term.

The Distribution I requirement in Physical Sciences is met in Astronomy 201-202.

Graduate students are usually expected to take courses in other fields such as Physics 572, 573, 574, 578; Mathematics 415-416; Electrical Engineering 4561, 4562, 4565; Theoretical and Applied Mechanics 1180-1183.

201. INTRODUCTION TO ASTRONOMY

Fall term. Credit four hours. Lectures, M W F 9. Laboratory, M T Th F 2-4:30. Mr. Shaw.

Fundamentals of astronomy with emphasis on the planets, moon, comets, meteors, the solar system as a unit. Telescopes. Night observation at Fuertes Observatory. Intended as a base for those who major in astronomy and as a survey for students from other fields.

202. INTRODUCTION TO ASTRONOMY

Spring term. Credit four hours. Lectures, M W F 9. Laboratory, M T Th F 2-4:30. Mr. Shaw.

Fundamentals of astronomy with emphasis on the sun, stars, the galaxy, the sidereal universe. Spectroscopy. Night observation at Fuertes Observatory. Suitable for major students and as a survey for students from other fields. (Astronomy 201 is not prerequisite to Astronomy 202.)

305. CELESTIAL NAVIGATION

Spring term. Credit three hours. M W F 11. Mr. Shaw.

Celestial and space navigation. Theory of position determination on sea, in air, and in space. Air and Nautical Almanacs. Day and night practice with marine, standard bubble, and automatic sextants. Chart work.

310. ASTROMETRY

Spring term. Credit four hours. Prerequisites, Astronomy 201-202 and consent of instructor. Hours to be arranged. Mr. Shaw.

Observational methods and techniques. Visual binaries. Asteriod orbits. Coordinate and magnitude measurement, photoelectric photometry, astronomical photography.

[315. ASTRONOMICAL SPECTROSCOPY

Spring term. Credit four hours. Prerequisites, Astronomy 201-202 and consent of instructor. Hours to be arranged. Mr. Shaw. Not offered in 1965-1966.]

320. ORIGIN OF THE SOLAR SYSTEM

Fall term. Credit four hours. Prerequisites, Astronomy 201, the calculus, and the consent of the instructor. M W F 11. Mr. Shaw.

Analysis of proposed modes of origin and evolution of the solar system. Planetary structure. Age determination. Literature study and preparation of research papers.

330. INTRODUCTION TO ASTROPHYSICS

Fall term. Credit three hours. Prerequisites, the calculus, Physics 207-208, Astronomy 202 or the consent of the instructor. Mr. Harwit.

Dynamics of planetary and stellar systems. Stellar structure and evolution. Binary, variable, and peculiar stars. Nuclear synthesis in stars. Stellar atmospheres. Abundance of the chemical elements.

331. INTRODUCTION TO SPACE PHYSICS

Spring term. Credit three hours. Prerequisites, Astronomy 330 or consent of instructor. Mr. Harwit.

Interstellar dust and gas. Evolution of the Strömgren sphere. Star formation. Interstellar magnetic fields, cosmic rays and radio emission. Interplanetary gas and dust. Comets, meteorites, and micrometeorites.

340. SPECIAL TOPICS IN ASTRONOMY

Fall or spring term. Credit two or four hours. Prerequisite, consent of the instructor. Mr. Shaw.

Qualified students may receive instruction in selected topics according to their need and preparation. Topics occasionally given formally include comets and meteors, binary stars, gaseous nebulae, and interstellar matter.

510. COSMOLOGY AND EVOLUTION

Spring term. Credit three hours. Given on sufficient demand. Open to graduate students with the consent of the instructor. Hours to be arranged. Messrs. Gold and Harwit.

Special and general theory of relativity. Cosmological models, red shift of extragalactic nebulae, evolution of stars and galaxies.

520. RADIO ASTRONOMY I

Fall term. Credit three hours. Prerequisites, Astronomy 330, or graduate status, or consent of the instructor. Hours to be arranged. Mr. Drake.

Radio astronomy telescopes and electronics. Preferred observing procedures and data analysis. Concepts of aperture synthesis. Physical mechanisms of radio emission. Radio and radar studies of the solar system. Physical nature of the sun, moon, and planets as deduced from radio studies.

521. RADIO ASTRONOMY II

Spring term. Credit three hours. Prerequisite, Astronomy 520. Hours to be arranged. Mr. Drake.

Thermal and non-thermal radiation from the galaxy. Supernova remnants. Relation of galactic emission to cosmic rays. Galactic 21-cm. emission. Galactic structure and kinematics as inferred from radio observations. Radio emission from normal and abnormal galaxies. Quasi-stellar radio sources. Physical theories of the quasi-stellar sources and abnormal radio galaxies.

524. RADIO WAVES IN IONIZED GASES

Fall term. Credit three hours. Prerequisite, Astronomy 520 or consent of the instructor. Hours to be arranged. Mr. Cohen.

Propagation of radio waves in inhomogeneous plasma. Scattering by irregularities. Generation and absorption of radio waves. Applications to the theory of radio emission by the sun and by Jupiter.

530. MAGNETOHYDRODYNAMICAL PROCESSES IN THE SOLAR SYSTEM

Fall term. Credit three hours. Hours to be arranged. Open to graduate students with the consent of the instructor. Messrs. Axford and Gold.

Solar cycle, sunspots, flares. Interplanetary medium. The earth's magnetosphere, magnetic storms, aurorae, radiation belts. Theories of the origin of the earth's magnetic field. Solar and galactic cosmic rays.

540. ADVANCED STUDY AND RESEARCH

Either term. Credit one to four hours a term. Prerequisite, advanced standing in astronomy and consent of the instructor. Staff.

Upon sufficient demand, seminars will be arranged from time to time in topics not currently covered in regular courses. Typical seminar subjects are high energy particles in astronomy, planetary and lunar physics, geophysics.

560. THEORY OF STELLAR STRUCTURE AND EVOLUTION

Spring term. Credit three hours. Prerequisite, graduate status with good physics background. M W F 2. Given upon sufficient demand (usually in alternate years). Staff.

Summary of observational facts. Dimensional analysis. Nuclear reactions in stars. Models for static and evolving stars. Very massive objects and general relativity. White dwarfs and neutron stars.

BIOLOGICAL SCIENCE

The Division of Biological Sciences, Dr. R. S. Morison, Director, offers a single major in biological science within which a variety of concentration areas are available. Majors in botany and zoology will no longer be offered after September 1, 1965; students should register instead for the biological science major. Students accepted in the zoology major before that date may choose to remain in it or to switch to the biological science major.

Students are urged to apply for provisional admission to the biological science major during the second term of the freshman year or the first term of the sophomore year. Final admission to the major will require completion of (1) a year of introductory biology (Biology 101-102 or Botany 101-102 or Zoology 101-102 or 103-104), (2) a year of general chemistry (preferably Chemistry 107-108), and (3) a year of calculus (Math 111-112 or 111-122). Whenever possible, the student should include the above three subjects in his freshman schedule and complete organic chemistry and genetics in the sophomore year. It is also advisable for students anticipating a concentration in biochemistry or physiology to complete Physics 207-208 in the sophomore year, and all students should consider doing so. A student is not encouraged to undertake a major in biological science unless his performance in the

courses listed above gives evidence of capacity to do satisfactory work at a more advanced level.

In addition to the introductory courses in chemistry, biology, and mathematics, each major student must complete the following: (1) Chemistry 353-355 (or 357-358), (2) a year of physics (preferably Physics 207-208, but 101-102 is also accepted), (3) Plant Breeding 301, (4) Biochemistry 400, (5) the biological science breadth requirement outlined below, and (6) one of the concentration areas outlined below.

The biological science breadth requirement is designed to ensure that each major student becomes familiar with a minimum number of different aspects of modern biology. In fulfillment of this requirement, each student must pass one of the listed courses in three of the following six categories:

(1) *Behavior*: Conservation 450; Interdepartmental 301; Psychology 201, 323.

(2) *Ecology*: Biology 416; Zoology 360.

(3) *Bacteriology*: Bacteriology 201.

(4) *Physical Science and Mathematics*: Chemistry 236, 387 (or 389); Geology 101, 102, ILR 210, 311; Mathematics 213, 221; Plant Breeding 510; Physics 200, 310, 360.

(5) *Physiology*: Botany 235, 530, 531; Physical Biology (Vet.) 109; Zoology 441, 541-543.

(6) *Systematics and Evolution*: Botany 312, 317, 323; Conservation 207, 208, 209; Entomology 322, 331; Plant Pathology 309; Zoology 315, 316, 321, 322, 365.

The biological science concentration requirement is designed to help the student achieve depth in some area of biology of his own choosing. It permits maximum flexibility, while ensuring that the selection of advanced courses will form a coherent and meaningful unit. The student should consult with his adviser in selecting the courses he will take in fulfillment of both the breadth and concentration requirements. In fulfillment of the concentration requirement, each student must pass a minimum of twelve hours in courses selected from those listed under one of the following eight areas (courses used in fulfillment of the breadth requirement may not be counted again here):

(1) *Behavioral Biology*: Conservation 450; Interdepartmental 301, 302, 404; Physical Biology (Vet.) 109; Psychology 201, 305, 306, 307, 323, 324, 326, 426, 466, 471, 472; Zoology 524. A maximum of four hours in Biology 407 or Conservation 493 or Psychology 492 may be included.

(2) *Biochemistry*: Bacteriology 415, 416; Chemistry 426, 456; Plant Breeding 501; Zoology 541, 543. Biochemistry 401 and Chemistry 390 (or 388) must be included. A maximum of four hours in Biochemistry 300 may be included.

(3) *Botany*: Botany 235, 312, 313, 317, 323, 324, 418, 424, 426, 427, 530, 531, 532, 533; Plant Pathology 309, 419, 529, 539; Biology 416. A maximum of four hours in Biology 407 or Botany 471 or Plant Pathology 431 (mycology only) may be included.

(4) *Evolutionary and Environmental Biology*: Anthropology 304; Biology 402, 416; Botany 312, 313, 317, 323, 418, 426, 427; Conservation 207, 208, 209, 210, 422, 425, 428, 450, 480, 481; Entomology 322, 331, 471, 572; Geology 202,

471; Plant Breeding 500; Plant Pathology 309, 419, 529, 539; Zoology 315, 316, 321, 322, 360, 365, 561, 562, 570. A maximum of four hours in Biology 407 or Botany 471 or Conservation 490, 491, 492, 493, 497 or Plant Pathology 431 (mycology only) or Zoology 391-392, 491-492 may be included.

(5) *Genetics and Developmental Biology*: Anatomy (Vet.) 7; Bacteriology 416; Biology 402; Botany 324, 424; ILR 210, 311; Physical Biology (Vet.) 104; Plant Breeding 500, 501, 510, 511; Plant Pathology 419; Zoology 326. A maximum of four hours in Biology 407 or Bacteriology 320 or Plant Breeding 450 or Zoology 391-392, 491-492 may be included.

(6) *Microbiology*: Agronomy 306, 506; Bacteriology 301, 312, 403, 404, 406, 407, 410, 413, 414, 415, 416; Pathology and Bacteriology (Vet.) 149. A maximum of four hours in Bacteriology 420 or Biology 407 may be included.

(7) *Physiology*: Animal Husbandry 425, 427 (or Zoology 540); Bacteriology 310, 415; Biochemistry 401; Botany 235, 530, 531; Physical Biology (Vet.) 100, 109; Poultry 430; Zoology 441, 443, 541, 543. Chemistry 390 (or 388) must be included. A maximum of four hours in Biology 407 or Botany 471 or Zoology 391-392, 491-492 may be included.

(8) *Zoology*: Animal Husbandry 425, 427; Conservation 207, 208, 209, 210, 422, 425, 428, 450; Entomology 322, 331, 351, 471, 551; Poultry 430; Zoology 315, 316, 321-322, 325, 326, 360 (or 561-562 or Biology 416), 365, 426, 441-443, 524, 540, 541-543, 554, 556, 570. A maximum of four hours of Biology 407 or Conservation 490, 491, 492, 493 or Zoology 391-392, 491-492 may be included.

The Honors program in biological science offers the superior student an opportunity to study in seminars and to gain experience in research as an undergraduate. The requirements for admission to the Honors program are a cumulative grade average of 80 or higher and permission of the Director of the Division. Prospective candidates for Honors should confer with the Director or his representative early in the junior year; further information on the Honors program may be obtained at the Director's office, Room 201, Roberts Hall.

In addition to the regular Honors program, the Division administers the Ford Three-Year Master's Program in Biology, a special Honors program designed for a limited number of very superior students. Students accepted for this program begin three years of special training in their junior year, do independent research in their senior year, and continue this research during the summer following graduation and during one year in the Graduate School. They are thus able to complete work for a Master's degree after one year of graduate work instead of the customary two years. Students in the program are given scholarships for the two undergraduate years and a teaching fellowship for the graduate year. Those interested in applying for this program are urged to confer with Professor D. J. Hall as early in the second semester of their sophomore year as possible.

The Distribution I requirement in biological sciences for non-majors is satisfied by Biology 101-102, Botany 101-102, or Zoology 101-102. A student may qualify for advanced standing credit and/or placement in biological science by superior performance on the Advanced Placement Examination in biology

or on a special placement examination to be given at entrance to students who present evidence of particularly thorough training in the subject.

The Distribution II requirement for non-majors may be satisfied in biological science by completion of any one of a large number of possible course combinations. A complete list of possible combinations may be obtained from the office of the Director of the Division of Biological Sciences. The following are a few examples of combinations: Zoology 201-242, Plant Breeding 300, Bacteriology 201; Bacteriology 201, Plant Breeding 301, Biology 416 or Zoology 360, Zoology 242; Zoology 321-322-325-326; Zoology 321-322, Conservation 208 or 209, Zoology 443, Biology 402; Plant Breeding 301, Botany 235 or Zoology 443, Biology 416 or Zoology 360, Biochemistry 400; Conservation 450, Plant Breeding 301, Biology 416 or Zoology 360, Conservation 207 or 208 or 209; Botany 235, 323, 324, 312 or 313 or 317.

The Division of Biological Sciences offers courses through seven different administrative units as listed below (more complete course descriptions for courses listed under Bacteriology, Biochemistry, Biology, Botany, Conservation, and Plant Breeding are published in the *Announcement of the College of Agriculture*).

Bacteriology

Mr. H. W. Seeley, Chairman; Messrs. E. A. Delwiche, G. A. Knaysi, R. E. MacDonald, H. B. Naylor, P. J. VanDemark, and S. A. Zahler.

201. GENERAL BACTERIOLOGY

Fall term. Credit five hours. Prerequisite, introductory biology or botany or zoology, and Chemistry 104 or 108. Lectures, M W F 11. Laboratory practice, M W or T Th 2-4:30, T Th 8-10:30. Mr. Seeley and assistants.

A general survey of the field of bacteriology, with the fundamentals essential to further work in the subject.

301. DAIRY AND FOOD MICROBIOLOGY

Spring term. Credit four hours. Prerequisite, Bacteriology 201. Lectures, M W 12. Laboratory, M W 1:40-4:30. Mr. Naylor.

A study of the major groups of micro-organisms of importance in food preservation, food fermentation, and public health, with laboratory practice in the use of standard and special methods for microbiological testing and control.

312. APPLIED AND INDUSTRIAL MICROBIOLOGY

Fall term. Credit three hours. May be taken for two hours' credit with permission. Given in alternate years. Prerequisite, Course 201. T Th 11 and S 10. Staff.

A survey of the microbiology of food, water, sewage, and industrial fermentations.

403. ADVANCED BACTERIOLOGY

Spring term. Credit two hours. Given in alternate years. Prerequisites, Course 201 and organic chemistry. Lectures, T Th 1:40-2:30. Mr. MacDonald.

A study of the comparative physiological and ecological relationships among the bacteria. Such subjects as bacterial anatomy, cell growth, ecology, nutrition, and

autotrophy are covered. Some of the more complex groups of bacteria, such as the photosynthetic bacteria, are studied in detail.

404. ADVANCED MICROBIOLOGY

Fall term. For upperclassmen and graduate students. Credit two hours. Prerequisites, Course 201 and organic chemistry. Lectures, T Th 1:40. Mr. Zahler.

A study of a variety of biological phenomena among viruses, bacteria, yeasts, and molds, including genetics, radiation effects, and metabolic control mechanisms.

406. ADVANCED MICROBIOLOGY, LABORATORY

Fall term. Credit two hours. Must be taken with or after Course 404. Registration by permission of instructor. T Th 2:40-4:30. Mr. Zahler.

Laboratory experience with organisms and systems described in Course 404.

SOIL MICROBIOLOGY

(See Agr.: Agronomy 306.)

407. ADVANCED BACTERIOLOGY, LABORATORY

Spring term. Credit two hours. Must be taken with or after Course 403. Prerequisite, permission of the instructor. T Th 2:30-4:30. Mr. MacDonald.

Techniques for the isolation, cultivation, and rigorous study of those groups of bacteria discussed in Course 403.

410. PHYSIOLOGY OF BACTERIA

Spring term. Credit two hours. Prerequisites, Course 201 and at least one additional course in bacteriology and one in organic chemistry. Lectures, T Th 10. Mr. Delwiche.

The physiology of bacteria and the biochemistry of microbic processes.

PATHOGENIC BACTERIOLOGY

(See the *Announcement of the New York State Veterinary College.*)

413. MORPHOLOGY AND CYTOLOGY OF BACTERIA

Fall term. Credit three hours. For seniors and graduate students. Lectures, T Th S 9. Mr. Knaysi.

The morphology, cytology, and microchemistry of micro-organisms.

[414. VIROLOGY

Spring term. Credit two hours. Mr. Naylor. Not offered in 1965-1966.]

415. CHEMISTRY OF BACTERIAL PROCESSES

Spring term. Credit two hours. For seniors and graduate students. Lectures, M W 11. Mr. Delwiche.

The chemistry of the metabolism, fermentation, and biosynthetic processes of micro-organisms.

416. MICROBIAL GENETICS

Fall term. Credit two hours. Given in alternate years. For upperclassmen and graduate students. Hours to be arranged. Mr. Zahler.

Genetics of micro-organisms, especially bacteria and viruses. An advanced course for students who have had basic training in bacteriology and genetics.

420. RESEARCH

Either term. Credit by arrangement. For advanced students. Staff.

ADVANCED SOIL MICROBIOLOGY

(See Agr.: Agronomy 506.)

[517. METHODS IN ADVANCED BACTERIOLOGY

Spring term. Credit four hours. Mr. MacDonald. Not offered in 1965-1966.]

621. SEMINAR

Throughout the year. Without credit. Hours to be arranged.

Biochemistry

Mr. R. D. O'Brien, Chairman; Mr. J. M. Calvo, Miss L. J. Daniel, Messrs. J. L. Gaylor, G. P. Hess, R. W. Holley, D. B. McCormick, A. L. Neal, W. L. Nelson, H. A. Scheraga, H. H. Williams, and L. D. Wright.

300. SPECIAL PROBLEMS IN BIOCHEMISTRY

Either term. Credit to be arranged. Prerequisite, permission to register. Staff.

400. PRINCIPLES OF BIOCHEMISTRY, LECTURES

Fall term. Credit four hours. Prerequisite, Chemistry 353-355 or the equivalent. For both undergraduate and graduate students. M T Th S 8. Miss Daniel.

A basic course dealing with the chemistry of biological substances and their transformations in living organisms.

401. PRINCIPLES OF BIOCHEMISTRY, LABORATORY

Fall term. Credit two hours. Prerequisite, Quantitative Analysis or permission of the instructor. Must be taken with or after Course 400. M W or T Th 2-4:30. Preliminary examinations will be held twice during the semester at 7:30 p.m. Miss Daniel, Mr. Neal, and assistants.

Laboratory practice with biochemical substances and experiments designed to illustrate chemical reactions that may occur in biological systems.

500-501. GENERAL BIOCHEMISTRY, LECTURES

Throughout the year. Credit four hours per term. Prerequisites, Quantitative Analysis, Organic Chemistry 358 or the equivalent, and Physical Chemistry 390 or the equivalent, or permission of the instructor. Open to undergraduates only with permission. M W F S 9. Mr. Holley and Messrs. Gaylor, McCormick, and Calvo.

502. GENERAL BIOCHEMISTRY, LABORATORY

Spring term. Credit three hours. Must be taken with or after Course 501. Prerequisite, permission of instructor before Nov. 1. M W or T Th 1:40-4:30 and additional periods by appointment. Mr. Nelson.

520-521. ADVANCED BIOCHEMISTRY

Throughout the year. Credit one or two hours per term. Prerequisite, Biochemistry 501. T Th 9. This course is divided into four sections of one hour credit each; students may take one or more sections for one to four credits. Fall term, Mr. Gaylor, carbohydrates and lipids; Mr. Hess, proteins and enzymes. Spring term, Mr. Calvo, nucleic acids and control mechanisms; (instructor to be announced) plant biochemistry.

600. BIOCHEMISTRY SEMINAR

Throughout the year. No credit. F 4:15. Open to all who are interested.

Biology

Messrs. R. G. Beard, W. L. Brown, T. Eisner, D. J. Hall, W. T. Keeton, D. Pimentel, R. B. Root, and L. D. Uhler.

101-102. GENERAL BIOLOGY

Throughout the year. Credit three hours a term. Biology 101 with a grade of 50 or higher is prerequisite to Biology 102, unless special permission is obtained from the instructor. Not open to students who have taken both Zoology 103-104 (or 101-102) and Botany 101-102. If Biology 101-102 is taken after Zoology 103-104 (or 101-102) or Botany 101-102, credit two hours a term. Lectures M W F 8, or M W F 10, or M W F 11. Laboratory, M T W Th or F 1:40-4:30, or Th F or S 8-10:50, or T Th or F 10-12:50, or S 9-11:50, or W 7-9:50 p.m. Neither the Friday lecture nor the laboratory will meet every week. Preliminary examinations given twice each semester at 7:30 p.m. Mr. Keeton, with assistance of Messrs. Beard, Hall, guest lecturers, and assistants.

Designed to acquaint students majoring within or outside the biological sciences with the established principles of biology, and with the body of research and the methods that led to the formulation of these principles. The work is not divided in the more traditional way into a unit on animals and a unit on plants, nor is it based on a phylum-by-phylum survey; instead, attention is focused on a series of topics central to modern biology, and these are explored in some depth. More specifically, the topics include the organization, integration, and maintenance of living organisms as energy systems, and their reproduction, heredity, behavior, and interactions. Emphasis is placed on an understanding of each topic in the light of modern evolutionary theory.

The Friday lectures, given approximately every other week, will be by outstanding faculty members of the University, lecturing on their own fields of research. The intent is to acquaint students with the excitement and promise of modern biological research, particularly the research being done at Cornell.

305. LABORATORY METHODS IN BIOLOGY

Either term. Credit three hours. Prerequisite, Biology 102, Botany 101-102, or Zoology 102 or 104. Limited to juniors, seniors, and graduate students. Lecture and laboratory, T or F 10-12:30 and additional periods by appointment. Mr. Uhler.

For students who intend to teach or to follow some phase of biology as a profession. Subjects covered: collection, preservation, and storage of materials; preparation of bird and mammal study skins; injection of circulatory systems with latex; clearing and staining of small vertebrates; and preparation and staining of smears, whole mounts, and sections.

INSECT MORPHOLOGY AND HISTOLOGY (ENTOMOLOGY 322)

Spring term. Credit four hours. Prerequisite, Entomology 210 or permission of instructor. Lectures T Th 11. Laboratory, M W 1:40-4:30. Mr. Eisner.

The principles of morphology, as illustrated by insects. Topics are considered at the anatomical, histological, and cytological levels. Emphasis is placed on special problems in morphogenesis, adaptive radiation, and functional anatomy. The various topics are considered in the light of modern evolutionary theory, and an effort is made to relate them to recent behavioral and physiological work.

INTRODUCTORY INSECT TAXONOMY

(See Agr.: Entomology 331.)

402. EVOLUTIONARY THEORY

Fall term. Credit two hours. Prerequisite, a course in genetics and permission of instructor. Lecture, Th 11. Discussion section, Th 12. Mr. Brown.

Discussion of selected topics in modern evolutionary science, with emphasis on the systematic, ecological, and behavioral aspects.

407. RESEARCH IN BIOLOGY

Either term. Credit and hours to be arranged. Prerequisite, adequate preparation in biological sciences and permission from the professor under whom the work is to be taken. Staff.

416. GENERAL ECOLOGY

Either term. Credit three hours. Prerequisite, Biology 102, Botany 101-102, or Zoology 102 or 104, or equivalent. Lectures, W or Th 2-4. Conferences and field trips by appointment. Messrs. Pimentel and Root.

The role of environment in the survival of plants and animals. The fundamentals of population dynamics, behavior, and migration and movement of organisms. The structure and organization of species populations and communities are studied in the light of recent evolutionary theory.

LIMNOLOGY (ENTOMOLOGY 471)

Spring term. Credit three hours. Prerequisites, nine hours of biological science, including Entomology 210 or the equivalent, a course in general physics, and a course in general chemistry. Lecture, F 10. Laboratories and field trips, F 2-4:30 and S 8-10:30. Mr. Berg.

A study of the life of inland waters and important physical and biological factors that affect it.

605. SEMINAR FOR M.S.T. DEGREE CANDIDATES

Spring term. Credit one hour. Time to be arranged. Mr. Uhler.

610. SPECIAL TOPICS IN BIOLOGY

Either term. Credit and hours to be arranged. Enrollment limited to students in the Ford Three-Year Master's Program. Mr. Hall.

Discussions of topics of special biological interest and seminars by outstanding faculty members from various departments at Cornell and other institutions. Designed to acquaint students with the excitement and promise of modern biological research.

Botany

Mr. H. T. Stinson, Chairman; Messrs. H. P. Banks, R. A. Barr, D. W. Bierhorst, R. T. Clausen, J. M. Kingsbury, E. M. Shantz, F. C. Steward, and C. H. Uhl.

101-102. INTRODUCTORY BOTANY

Throughout the year. Credit three hours a term. If taken after Biology 101-102, credit two hours a term. Students may begin the course in the spring term. Lectures, T Th 9 or 11. One laboratory period a week, M T W Th or F 2-4:30, T 10-12:30, S 8-10:30 or S 9-11:30. Mr. Banks and assistants.

Designed to give general students an understanding of the growth and evolution of plants and their role in nature. Provides the basic knowledge necessary for those who intend to specialize in some aspect of plant science.

Botany 101 is devoted to a study of growth in the flowering plants, with emphasis placed on structure, function, and reproduction. Botany 102 is concerned with the phyla of plants, with representative life cycles, and with a consideration of the importance of various groups in the study of biological principles. The study of the evolution of the groups of plants is based on genetical and environmental mechanisms that control it. The classification and ecology of plants is introduced in several laboratory periods spent in the field. The scientific process, the growth of botanical knowledge, botanical principles, and particularly, the necessity of changing interpretations as new information is acquired are introduced throughout the course.

235. PLANT PHYSIOLOGY

Either term. Credit four hours. Prerequisites, Botany 101-102 or Biology 101-102, and introductory chemistry. Intended primarily for undergraduates, but open to graduates who lack background in plant physiology. Lectures, T Th 10. Laboratory, T Th, or W F 2-4:30, or M 2-4:30, and S 8-10:30. Staff.

Designed to acquaint students with the general principles of plant physiology. Topics such as water relations, photosynthesis, translocation, digestion, respiration, mineral nutrition, growth, and reproduction are studied in detail.

COMPARATIVE MORPHOLOGY OF FUNGI

(Sec Agr.: Plant Pathology 309.)

312. BIOLOGY OF THE ALGAE

Fall term. Credit three hours. Prerequisites, Courses 101-102 or the equivalent. Lectures, M W 11. Laboratory, F 2-4:30. Mr. Kingsbury.

Structure, ecology, physiology, origins, economic importance, and evolution in the bluegreen, green, yellowgreen, golden brown, and euglenoid algae. Emphasis is placed on particular biochemical, physiological, or structural characteristics of algae of potential value in research on general biological problems. Biologically important characteristics of ponds and streams are brought out in relation to the algae populating them.

313. BIOLOGY OF THE ALGAE

Spring term. Credit three hours. Prerequisites, Courses 101-102 or the equivalent. Lectures, T Th 9. Laboratory, F 2-4:30. Mr. Kingsbury.

A continuation of Botany 312, covering the diatoms, dinoflagellates, brown, and red

algae and emphasizing the characteristics of the marine environment. Need not be preceded by Course 312. An optional field trip to marine and brackish habitats on Cape Cod and Cape Ann, Massachusetts, may be limited to 12 students.

317. TAXONOMY OF VASCULAR PLANTS

Fall term. Credit four hours. Prerequisites, Botany 101-102 or the equivalent and permission to register. Lectures, T Th 9. Laboratory, T Th 2-4:30. Mr. Clausen.

An introduction to the principles and literature of taxonomy, and a survey of the major groups of seed plants and ferns. Work in laboratory periods in the first part of the term is in the field.

323. PLANT ANATOMY

Fall term. Credit four hours. Prerequisites, Courses 101-102 or the equivalent and permission to register. Lectures, T Th 8. Laboratory, either M W 2-4:30 or T Th 10-12:30. Mr. Bierhorst.

A detailed study of the internal structure of vascular plants.

324. CYTOLOGY

Fall term. Credit four hours. Prerequisites, Botany 101-102 or Biology 102 or Zoology 102 or 104 or the equivalent. Lectures, M W 9. Laboratory, M W or T Th 10-12:30. Mr. Uhl.

Topics considered are protoplasm, cells and their components, nuclear and cell division, meiosis and fertilization, and the relation of these to the problems of development, reproduction, taxonomy, and heredity. Both plant and animal materials are used. Microtechnique is not included.

325. MICROTECHNIQUE

Spring term. Credit two hours. Prerequisite, permission to register. Hours to be arranged. Mr. Uhl.

A laboratory course in methods of preparing plant material for microscopical study.

[418. TAXONOMY AND ECOLOGY OF VASCULAR PLANTS

Spring term. Credit four hours. Mr. Clausen. Not offered in 1965-1966.]

MECHANISMS OF VARIATION IN FUNGI

(Sec Agr.: Plant Pathology 419.)

424. CYTOGENETICS

Spring term. Credit three hours. Prerequisites, Botany 324 and Plant Breeding 301 or the equivalent. Lectures, M W 9. Laboratory, M or W 10-12:30. Mr. Uhl.

The cellular mechanisms of heredity including recent researches in cytology, cytotaxonomy, and cytogenetics.

426. MORPHOLOGY OF VASCULAR PLANTS

Spring term. Credit four hours. Given in alternate years. Prerequisites, Courses 101-102 or the equivalent and permission to register. Lectures, M W 12. Laboratory, M W 2-4:30. Mr. Bierhorst.

The comparative morphology, life histories, and phylogeny of the lower vascular plants, both fossil and recent.

[427. MORPHOLOGY OF VASCULAR PLANTS

Spring term. Credit four hours. Given in alternate years. Mr. Bierhorst. Not offered in 1965-1966.]

471. SPECIAL PROBLEMS IN BOTANY

Throughout the year. Credit not less than two hours a term. Staff.

ADVANCED MYCOLOGY

See Agr.: Plant Pathology 529 and 539.)

SPECIAL PROBLEMS IN MYCOLOGY

(See Agr.: Plant Pathology 531.)

530-531. PLANT PHYSIOLOGY, ADVANCED LECTURE COURSES

Throughout the year. Credit three hours a term. Primarily for graduate students, but undergraduates admitted by approval of instructor. Prerequisite, training in botany and chemistry to be determined in each case by the professor. Course 530 advisable, but not essential, before 531. Lectures, M W F 10. Mr. Steward.

532-533. PLANT PHYSIOLOGY, ADVANCED LABORATORY

Throughout the year. Credit four hours a term. Prerequisites, Botany 235 and 530-531 (may be taken concurrently). Primarily for graduate students, but undergraduates admitted by approval of instructor. Laboratory, M W or T Th 1:40-5:00. Recitation, F 2-4:00. Staff.

[534. PLANT PHYSIOLOGY, ADVANCED LECTURE COURSE

Fall term. Credit two hours. Not offered in 1965-1966.]

617. SEMINAR IN TAXONOMY AND ECOLOGY OF VASCULAR PLANTS

Fall term. Credit one hour. Prerequisite, Botany 418 and permission to register. M 12. Mr. Clausen.

639. SEMINAR IN PLANT PHYSIOLOGY

Throughout the year. No credit. Messrs. Steward, Thompson, and Shantz.

Conservation (Vertebrate Zoology and Marine Ecology)

Messrs. J. P. Barlow, W. C. Dilger, J. N. Layne, E. C. Raney, and C. G. Sibley.

207. BIOLOGY OF FISHES

Fall term. Credit four hours. Prerequisite, Zoology 101-102 or 103-104 or General Biology 101-102, or the equivalent. Lecture, M W 9. Laboratory, M W 2-4:30, T Th 9-11:30 or 2-4:30. Mr. Raney.

An introduction to the study of fishes; their structure, classification, evolution, distribution, ecology, physiology, and behavior.

208. BIOLOGY OF TERRESTRIAL VERTEBRATES

Spring term. Credit four hours. Prerequisite, Zoology 101-102, or Zoology 103-104,

or Biology 101-102 or equivalent. Lecture, M W 10. Laboratory, M W 2-4:30 or T Th 2-4:30. Mr. Layne.

An introduction to the evolution, characteristics, classification, life history, ecology, and behavior of terrestrial vertebrates, with emphasis on amphibians, reptiles, and mammals. An integrated treatment of principal aspects of vertebrate life such as locomotion, food relationships and feeding adaptations, activity rhythms, movements, social behavior, reproduction and population dynamics.

209. BIOLOGY OF BIRDS

Spring term. Credit three hours. Lectures, M W 11. Laboratory, W Th or F 2-4:30. Mr. Sibley.

The structure, classification, adaptations, migration, behavior distribution, ecology, and evolution of birds. Laboratory work on anatomy, identification of specimens, classification, nests and eggs, molts, plumages, and development.

210. FIELD ORNITHOLOGY

Spring term. Credit one hour. Prerequisite, Course 209, which may be taken concurrently. S 8-12. Mr. Sibley.

Field identification, ecology, and behavior of local species. Two all-day Saturday field trips will be taken.

[422. ADVANCED ICHTHYOLOGY

Spring term. Given in odd-numbered years. Credit four hours. Mr. Raney. Not offered in 1965-1966.]

425. MAMMALOLOGY

Fall term. Given in odd-numbered years. Credit four hours. Prerequisite, Course 208 or permission of the instructor. Lectures, T Th 8. Laboratories, F 2-4:30 and S 8-10:30. Mr. Layne.

Mammalian characteristics and their adaptive significance; the origin and evolution of mammals; methods and principles of mammalian systematics; and the distribution, relationships, major adaptive trends, and biology of the orders and families of recent mammals.

428. ADVANCED ORNITHOLOGY

Fall term in odd-numbered years. Credit three hours. Prerequisites, Course 209 or equivalent and permission of instructor. M W 2-4:30. Mr. Sibley.

Advanced aspects of avian biology including speciation, ecology, physiology, and classification.

450. COMPARATIVE VERTEBRATE ETHOLOGY

Fall term. Credit three hours. Prerequisite, permission of instructor; courses in comparative vertebrate anatomy and physiology are highly desirable. Lectures, T Th 9. Laboratory, to be arranged. Mr. Dilger.

A survey of the methods and principles of vertebrate ethology. Emphasis is placed on the causation, function, biological significance, and evolution of species-typical behavior.

480. OCEANOGRAPHY

Fall term. Credit three hours. Prerequisites, zoology, botany, chemistry, and physics, or the equivalents. Lectures, T Th 10. Laboratory, Th 12-12:50. Mr. Barlow.

Physical and chemical aspects of the ocean: geography and structure of ocean basins; origin and physical properties of sea water; distribution of salinity and temperature, heat and water budgets, formation of water masses; circulation, waves and tides; shore processes, formation and distribution of sediments.

481. MARINE ECOLOGY

Spring term. Credit three hours. Prerequisites, chemistry, physics, and either invertebrate zoology or limnology. Lectures, M W F 9. Mr. Barlow.

The sea as an environment; the physical and chemical characteristics of marine habitats; organic production, biochemical cycles, and distribution of non-conservative properties; relation of hydrography to distribution of populations.

490. RESEARCH IN ICHTHYOLOGY

Either term. Credit and hours to be arranged. Mr. Rancy.

491. RESEARCH IN HERPETOLOGY

Either term. Credit and hours to be arranged. Mr. Layne.

492. RESEARCH IN MAMMALOGY

Either term. Credit and hours to be arranged. Mr. Layne.

493. RESEARCH IN ORNITHOLOGY

Either term. Credit and hours to be arranged. Messrs. Dilger and Sibley.

[626. SEMINAR IN MAMMALOGY

Fall term. Given in even-numbered years. Credit two hours. Mr. Layne. Not offered in 1965-1966.]

Plant Breeding (Genetics)

Messrs. H. L. Everett, A. M. Srb, H. T. Stinson, and B. Wallace.

300. HUMAN GENETICS

Spring term. Credit two hours. (Students who have had Course 301 are allowed one-hour credit.) Prerequisite, Biology 102 or Botany 102 or Zoology 102 or 104. Lectures, W F 10. Discussion period, M 10; attendance voluntary. Mr. Srb.

An introduction to the laws of heredity, a survey of heritable characters in man, and discussions of the relationship between heredity in man and social problems. Intended primarily for students who have not previously had a college course in genetics and who wish to obtain a knowledge of principles of heredity, especially as applied to man. Not for biological science majors.

301. GENETICS

Either term. Credit four hours. Prerequisite, a beginning course in biological science. Lectures, M W F 8. Laboratory, T 8-10, or M T W Th or F 2-4. Messrs. Everett and Stinson.

A general study of the fundamental principles of genetics. Discussions of simple cases of inheritance, gene action and interaction, gene linkage, and the chromosome theory of heredity, inheritance of sex, effects of inbreeding and crossing, cytoplasmic

inheritance, the origin of heritable variations and their relation to evolution. Laboratory studies with *Drosophila*, *Neurospora*, and other organisms.

500. POPULATION GENETICS

Spring term. Credit two hours. Prerequisite, Course 301 or the equivalent. Lectures, T Th 11. Mr. Wallace.

A study of factors which influence the genetic structure of Mendelian populations and which are involved in race formation and speciation.

501. PHYSIOLOGICAL GENETICS

Spring term. Credit two hours. Prerequisites, Course 301 and a course in organic chemistry. Lectures, M W 8. Mr. Srb.

The nature and function of hereditary units studied in terms of physiology and biochemistry. Students are expected to do extensive reading in the periodical literature of genetics and to prepare a term paper.

STATISTICAL GENETICS

(See Agr.: Plant Breeding 519.)

Zoology

Mr. L. C. Cole, Chairman; Messrs. H. B. Adelman, J. M. Anderson, A. W. C. Blackler, P. W. Gilbert, S. L. Leonard, W. N. McFarland, R. B. Reeves, J. R. Valleryntyne, and W. A. Wimsatt.

Zoology deals with all aspects of the biology of animals. The Department of Zoology offers introductory courses fundamental to an understanding of animal biology and valuable to the student desiring only limited work in natural science, as well as intermediate and advanced work in several of the important basic disciplines of zoology. The student who has completed the major program in zoology will be well prepared for graduate work leading to advanced degrees in zoology or biology, or for the study of medicine or dentistry.

The zoology major will no longer be offered after September 1, 1965; students should register instead for the biological science major. Students accepted in the zoology major before that date may choose to remain in it or to switch to the biological science major. Prerequisites for admission to the major program include (a) Zoology 101-102, or 103-104, with a grade of at least 75 for each term; (b) Chemistry 107-108 or the equivalent; (c) Physics 101-102 or (preferably) 207-208.

The requirements for completion of the major program are as follows: (a) Zoology 321-322; (b) Plant Breeding (Agr.) 301 (Genetics); (c) Zoology 441-443 or 541-543; (d) a minimum of twelve hours to be selected from the following courses: Zoology 315-316; 325; 326; 360 or 561-562; 365, 426; 441-443 or 541-543; 524; 570; 391-392-491-492 (four hours only); Conservation (Agr.) 207-208 or Entomology (Agr.) 322 or Entomology (Agr.) 351; (e) organic chemistry (Chemistry 353-355 or the equivalent; maximum of six hours applicable). Further, it is strongly recommended that all students major-

ing in zoology complete an additional six hours selected from courses in botany, mathematics, or statistics (ILR 210, 311).

Honors candidates in zoology (College of Arts and Sciences only) must take at least eight hours of advanced and intensive Honors work (Zoology 391-392-491-492) under the direction of a staff member; of these eight hours, not more than four may be counted toward the completion of the normal course requirements for a major in zoology. During their final term, Honors candidates will be required either to submit a creditable thesis or to pass a comprehensive examination. Prerequisites for admission to candidacy for Honors are a cumulative average grade of 80 in all subjects and permission of the Honors adviser. Students who can meet the quality prerequisite and are interested in Honors candidacy should confer with the Honors adviser, Professor Leonard, early in the junior year, with a view to arranging admission and formulating plans for completion of the Honors requirements. If possible, Honors candidates should register for one of the Honors courses (Research in Zoology) not later than the second term of the junior year.

Provision is also made for a limited number of students who are not Honors candidates to undertake research in zoology under the supervision of a staff member (Zoology 381-382-481-482; hours and credit variable), which, however, may not be counted toward the completion of course requirements for a major in zoology.

The Distribution I requirement in Biological Sciences is satisfied in zoology by Zoology 101-102.

The Distribution II requirements for non-majors may be satisfied in zoology by selected sequences of related courses at or above the 200 level for which the stated prerequisite can be met. For this purpose a pair is considered as a pair of sequentially numbered courses (e.g., Zoology 315-316, or 321-322), or a pair of courses not so numbered but dealing with closely related subjects. The following groupings are suggested, but this is by no means a complete list: Zoology 201, 242; Zoology 201, 370; Zoology 360, 365; Zoology 325, 326, or 426. Other combinations are admissible but should be checked with the Department; note that one term of Zoology 321-322 may not be combined with a different course to constitute a sequence.

101-102. INTRODUCTORY ZOOLOGY

Throughout the year. Credit three hours a term. If taken after Biology 1, credit two hours a term. Intended for students in Arts and Sciences. Zoology 101 prerequisite to Zoology 102. Lectures, T Th 9 or 12. Stimson G-25. Laboratory, M T W Th or F 2-4:20 or W 8-10:20 or F 10-12:20 or S 9-11:20. Stimson 102, 104, 107, and 116. Regularly scheduled examinations will be held at 8 p.m. twice each term. Mr. Anderson and Assistants.

An introduction to the fields of zoological study, designed both to provide a background for more specialized courses in zoology and to acquaint students in other fields with the fundamental facts about animal life. The principal divisions of the animal kingdom are surveyed with respect to similarities and differences in structure, function, behavior, and evolutionary history. The importance of other animals to man is emphasized. Both in the laboratory work and in lectures the student is introduced to representative types of animals and to the techniques by which man has acquired biological knowledge.

103-104. GENERAL ZOOLOGY

Throughout the year. Credit three hours a term. If taken after Biology 1, credit two hours a term. Intended for students in Agriculture and Home Economics. Zoology 103 normally prerequisite to Zoology 104. Lectures, T Th 8. Laboratory, M T W Th or F 2-4:20; M T 10-12:20; or S 8-10:20, 9-11:20, 10:30-1. Stimson 102, 104, 107. Regularly scheduled examinations will be held at 7 p.m. twice each term. Mr. Leonard and Assistants.

A survey of the various branches of the zoological sciences to serve as a background for advanced work in the study of animals. The principles of zoology will be illustrated by the study of representative animals with emphasis on those of economic importance to agriculture and to man. Emphasis will be placed on the biology of the vertebrates including the structural, functional, developmental, and genetic aspects.

201. HUMAN STRUCTURE AND DEVELOPMENT

Fall term. Credit three hours. Open to students in all colleges but should not be elected by prospective zoology majors. Lectures, T Th S 10.

An examination of the development and structure of the human body. The anatomy of the body is approached as a study of the structural basis for its functional activities. This course and Zoology 242 are complementary, the one course emphasizing embryology and anatomy of the human body while the other deals primarily with physiological functions of organ systems.

Zoology 201 is one of a group of courses dealing with the general topic of the nature of man from the perspectives of the biological and behavioral sciences. The other courses in the group are Child Development (H.E.) 115 and Anthropology 265. The courses may be taken singly or in any order.

242. HUMAN PHYSIOLOGY

Spring term. Credit three hours. Prerequisite, a previous course, in either college or high school, in biology and in chemistry. Open to students in all colleges, but should not be elected by prospective zoology majors. M W F 10. Mr. REEVES.

An analysis of the functions of the human body. This survey will include blood and the circulatory system, nerve, muscle, kidney, respiratory system, digestive tract, endocrine and reproductive organs, central nervous system, and the organs of the special senses. Emphasis will be placed on interaction of systems and regulatory mechanisms.

This course and Zoology 201 are complementary, the one course emphasizing embryology and anatomy of the human body while the other deals primarily with physiological functions of organ systems.

[315-316. INVERTEBRATE ZOOLOGY

Throughout the year. Credit four hours a term. Either term may be taken independently, but there is some advantage in following the normal sequence. Prerequisites, Zoology 101-104 or 103-104, or equivalent, and permission of instructor. Lecture, W 11. Laboratory, W F 2-4:30. Mr. Anderson and Assistant. Not offered in 1965-1966.]

321-322. COMPARATIVE ANATOMY OF VERTEBRATES

Throughout the year. Credit three hours a term. Prerequisite, Zoology 101-102, or 103-104, or the equivalent. In these prerequisite courses a student must have earned a grade of at least 75. Zoology 321 prerequisite to Zoology 322. Lectures, M 8 or 9.

Laboratory, M F or T Th 2-4:30; W F or T Th 8-10:30; or W 2-4:30 and S 8-10:30. Mr. Gilbert and Assistants.

A thorough study and dissection of representative vertebrate types, including fish, amphibian, reptile, bird, and mammal, together with demonstrations on species other than the types dissected. Intended to give students an evolutionary background for the study and appreciation of the structure of higher vertebrates, including man.

325. HISTOLOGY: THE BIOLOGY AND DEVELOPMENT OF THE TISSUES

Fall term. Credit four hours. Prerequisites, Zoology 101-102, or 103-104, and 321-322. Lectures, T Th 11. Laboratory, T Th 8-10:30 or 2-4:30. Mr. Wimsatt and Assistants.

A survey of the structure, functions, and development of the tissues. The treatment is general, designed to provide students of biology with a basis for the understanding of normal and abnormal structure of the vertebrates. Each student will make for his own use a series of typical microscopic preparations.

326. EMBRYOLOGY

Fall term. Credit four hours. Prerequisites, Zoology 101-102, or 103-104. Lectures, W F 11, Laboratory, W F 8-10:30 or 2-4:30. Mr. Blackler and Assistants.

A course of general embryology with examples drawn from the animal kingdom. Physiological as well as morphological considerations are treated and brought into relation with genetics, cellular physiology, and biochemistry. Vertebrate embryology is considered on a comparative basis with some emphasis on the development of amphibians, birds, and mammals.

360. GENERAL ANIMAL ECOLOGY

Spring term. Credit four hours. Prerequisites, Zoology 101-102 or 103-104, or their equivalent, and consent of the instructor. Lectures, W F 10. A total of eight laboratory and field periods S 8-1. Mr. Cole.

An introduction to the local and world-wide distribution of animals with reference to conditions of existence; effects of environmental factors on animals; adaptations to special habitats; modification of environment by animals; principles of population growth, composition, and density control. The adaptations of local animals to particular habitats will be studied in the field and laboratory.

365. EVOLUTION

Fall term. Credit four hours. Prerequisites, one year of college work in a biological science and one year of college chemistry. M W F 10. Mr. Vallentyne.

An integrating course for students interested in the principles and mechanisms of the evolutionary process. Covering the origin of living matter, Darwin on "the origin of species," the gene concept, and the genetic basis of natural selection. Term paper required.

381-382. RESEARCH IN ZOOLOGY

Informal, junior year. Credit and hours to be arranged. Problems may be undertaken in any phase of zoology, but the consent of the instructor concerned is a prerequisite.

391-392. RESEARCH IN ZOOLOGY

Honors, junior year. Either term. Credit and hours to be arranged. Prerequisite, admission to candidacy for Honors in zoology. Individual advanced work under the

guidance of an Honors adviser, designed to increase the knowledge and experience of the candidate with the subject matter and the methods of research in some important phase of zoology.

[403-404. SPECIAL TOPICS IN ZOOLOGY

Throughout the year. Credit four hours a term. Open to graduate students and advanced undergraduates. Permission of instructor required. Hours as arranged. Not offered in 1965-1966.]

426. SPECIAL HISTOLOGY: THE BIOLOGY OF THE ORGANS

Spring term. Credit four hours. Prerequisite, Zoology 325. Enrollment limited to 20 students. Lectures, W F 9. Laboratory, W F 2-4:30. Mr. Wimsatt and Assistants.

A continuation of Zoology 325. Zoology 325 and 426 together give the fundamental facts of the microscopic structure and function of the body.

441. GENERAL AND COMPARATIVE PHYSIOLOGY (LECTURES)

Fall term. Credit three hours. Prerequisites, one year of biology or zoology and college courses in chemistry. Organic chemistry desirable. Lectures, M W F 10. Mr. McFarland.

The principal physiological functions of both vertebrates and invertebrates, including muscle contraction, nerve action, respiration, metabolism, circulation, excretion, and physiological regulation.

443. GENERAL AND COMPARATIVE PHYSIOLOGY (LABORATORY)

Fall term. Credit one hour. Must be taken with Zoology 441. Limited to 96 students, 12 per section. Individual sections meet in alternate weeks; a total of seven lectures in alternate weeks. Lecture, W 2. Laboratory, T 8-11, M T F 1:40-4:30. Mr. McFarland and Assistants.

481-482. RESEARCH IN ZOOLOGY

Informal, senior year. See description under Zoology 381-382.

491-492. RESEARCH IN ZOOLOGY

Honors, senior year. See description under Zoology 391-392.

521-522. HUMAN ANATOMY

Hours and credit to be arranged. Open to a limited number of graduate students only. Permission of instructor required for registration.

Detailed dissection of the human body with some emphasis upon function.

524. COMPARATIVE NEUROLOGY

Spring term. Credit four hours. Primarily for graduate students but open to qualified undergraduates. Permission of instructor required. Lectures, T Th 12. Laboratory, M or W 2-4:30.

A comparative study of the vertebrate nervous system with emphasis upon the primate. Studies include dissections of the brain and the identification of nuclei and tracts in sections of the brain and spinal cord. Functional aspects of anatomical relations are stressed.

540. EXPERIMENTAL ENDOCRINOLOGY

Spring term. Credit two or three hours. Prerequisites, a year of zoology, organic chemistry, physiology, and consent of the instructor. Primarily for graduate students; open to undergraduates for two credits. Lectures, M F 11. Laboratory, M 2-4:30. Mr. Leonard.

Lectures on anatomy, physiology of the vertebrate endocrine glands, glandular interrelationships; chemical and physiological properties of hormones, assay methods. Laboratory, small-animal surgery and microtechnique for the endocrines, illustrative experiments on the effects of hormones.

541. CELLULAR PHYSIOLOGY LECTURES

Fall term. Credit two hours. Prerequisites, animal or plant physiology, organic chemistry, physics, and consent of the instructor. Lectures, M W 11. Mr. Reeves.

An introduction to basic aspects of animal cell function including structural and functional organization of cells, permeability and active transport, transcellular secretion, ionic mechanisms underlying excitability phenomena in neurons and receptor cells, contractility, and bioluminescence.

543. CELLULAR PHYSIOLOGY LABORATORY

Fall term. Credit two hours. Enrollment is limited. Laboratory, W or Th 1:40-4:30. Mr. Reeves and Assistant.

The laboratory emphasizes a number of biophysical approaches to cellular activities.

554. SPECIAL TOPICS IN PHYSIOLOGY

Spring term. Credit four hours. Prerequisite, consent of instructor. For advanced students in biological sciences. Enrollment is limited. Afternoon meetings; day to be arranged. Mr. Reeves.

The current and classical literature on vertebrate respiratory mechanisms will be covered.

556. SPECIAL TOPICS IN COMPARATIVE PHYSIOLOGY

Spring term. Credit four hours. Prerequisite, consent of instructor. For advanced students in biological sciences. Enrollment limited. Th 1:40-4:30. Mr. McFarland.

Detailed consideration of selected topics in comparative physiology. Preparation of demonstration experiments stressing technique and individual research problems will be included. Topics will vary from year to year.

561-562. ECOLOGY AND PHYSIOLOGY OF THE INVERTEBRATES

Throughout the year. Credit four hours a term. Prerequisites, one year of general biology or introductory zoology. Organic chemistry and some college mathematics are desirable. Lectures, M W 11. Laboratory, W 2-4:30. Mr. Cole.

A quantitative course on selected ecological topics for advanced undergraduates and graduate students. Topics include the origin and interpretation of habitat differences, toleration and response physiology, population dynamics, construction and uses of life tables, spatial distribution patterns, and approaches to the quantitative analysis of biotic communities.

570. BIOGEOCHEMISTRY

Spring term. Credit four hours. Prerequisites, one year of college work in a biological science, one course in geology, organic chemistry, and consent of the instructor.

Ecology and biochemistry are desirable. Enrollment is limited. Lectures, T Th 9. Seminar, S 9. Laboratory, M or T 2-4:30. Mr. Vallentyne and Assistant.

An introduction to the geochemical roles of living organisms, including the chemical composition of the organism-environment complex, the influence of living matter on erosional and depositional processes, biogeochemical cycles, fossil organic matter, and biological transformation of minerals. The laboratory is exclusively devoted to the geochemistry of organic matter.

SEMINAR IN ZOOLOGY

Fall and spring terms. For graduate students and Honors students in zoology, but open to all who are interested. W 4:30. Stimson 105.

Reports and discussion of current research in zoology.

CHEMISTRY

Mr. H. A. Scheraga, Chairman; Messrs. A. C. Albrecht, S. H. Bauer, A. T. Blomquist, B. F. Burnham, W. D. Cooke, D. G. Farnum, R. C. Fay, M. E. Fisher, J. H. Freed, D. H. Geske, M. J. Goldstein, G. G. Hammes, J. L. Hoard, R. Hoffmann, R. E. Hughes, A. W. Laubengayer, J. E. Lind, F. A. Long, J. Meinwald, W. T. Miller, G. H. Morrison, R. A. Plane, R. F. Porter, M. J. Sienko, D. A. Usher, B. Widom, C. F. Wilcox, J. J. Zuckerman.

Prerequisites to admission to a major in chemistry are: (1) Chemistry 103-104 and 205, or 107-108, or preferably 115-116; (2) Chemistry 236; (3) Physics 207-208; (4) Mathematics 111, 112, and 213, or the equivalent. A student is not encouraged to undertake a major in chemistry unless his performance in the above courses gives evidence of capacity to do satisfactory work at a more advanced level. At least two-thirds of the courses in chemistry must be submitted with a grade of 75 or higher.

For a major in chemistry, the following courses must be completed: (1) Chemistry 357-358, 387-388, 410, and one of the following: 426, 456, 457, or 481; (2) in addition, two courses selected from the following list: Chemistry 411, 426, 456, 457, 481, 497, 498, any graduate level course in chemistry, Biochemistry 500, 501, Zoology 321, 322, physics beyond Physics 208, mathematics beyond Mathematics 213; (3) Russian 101 or 301-302, or preferably German 101 or 301-302, unless two units of either language have been offered for entrance.

A major in chemistry permits considerable flexibility in the detailed planning of course programs, since it is presumed that the student will devote about half of the total course hours to subjects other than the physical sciences. Nevertheless, it is essential that the sequence of chemistry courses be started as early as possible. The courses are arranged as a progression with some courses (including mathematics and physics) prerequisite to those which are more advanced. During the first year the student should register for mathematics, general chemistry, English, and foreign language. In the second year, he should complete calculus, take physics, organic chemistry, analytical chemistry, and a course in Distribution I. Physical chemistry should be taken in the third year. Advanced courses in physics and mathematics are recom-

mended as electives for students who intend to continue for an advanced degree in chemistry.

The Honors program in chemistry offers the superior student an opportunity to do informal study in seminars and gain experience in research during his senior year. It is particularly recommended to those who plan graduate work in chemistry. Completion of the program at a high level of performance leads to the degree of Bachelor of Arts with Honors in Chemistry. The requirements for admission to the Honors program are a cumulative average grade of at least 80 and permission of the Department. Prospective candidates for Honors should discuss their plans with their advisers by April 15 of their junior year. Candidates for Honors must complete Chemistry 497 and 498.

Distribution II for students majoring in chemistry may not be fulfilled in mathematics or natural science.

The Distribution I requirement in Physical Sciences is satisfied in chemistry by Chemistry 103-104, 107-108, or 115-116.

For non-chemistry majors who wish to fulfill their Distribution II in chemistry, the following chemistry sequences are suggested: (1) 205, 357, and 358; (2) 236, 357, and 358; (3) 205, 236, and 353-355; (4) 380, 389, 390, and 578; (5) 353-355, 389, 390, and 578.

Students and members of the teaching staff are required to wear either prescription glasses or safety glasses in all chemistry laboratories. All courses listed below, except Chemistry 276 and 353, will be given in the Baker Laboratory of Chemistry.

General identification of the courses listed below is as follows:

Inorganic: 410, 411, 421, 505-506, 515-516.

Analytical: 236, 426, 433, 525, 527.

Organic: 353, 355, 356, 357-358, 456, 457, 461, 465-466, 565, 566, 570, 572, 574.

Physical and Theoretical: 276, 285-286, 380, 387-388, 389-390, 474, 477, 481, 578, 580, 586, 589, 593, 595, 596, 598.

Molecular Biology: 568, 572, 577, 582, 586.

103-104. INTRODUCTION TO CHEMISTRY

Throughout the year. Credit three hours a term. Chemistry 103 is prerequisite to Chemistry 104. Recommended for students who have not had high school chemistry and for those desiring a more elementary course than Chemistry 107-108. If passed with a grade of 70, this course serves as prerequisite for Chemistry 205 or Chemistry 353. Lectures, M F 10 or 11. Combined discussion-laboratory period, T or Th 8-11, W 10-1, M T W Th or F 1:40-4:30. Messrs. Burnham, Freed, Porter, and Assistants.

An introduction to chemistry with emphasis on the important principles and facts of inorganic and organic chemistry.

Note: Entering students exceptionally well prepared in chemistry may receive advanced credit for Chemistry 103-104 by demonstrating competence in the Advanced Placement examination of the College Entrance Examination Board, or in the advanced standing examination given at Cornell on the Tuesday before classes start in the fall. Application for this latter examination should be made to the Department of Chemistry no later than registration day.

107-108. GENERAL CHEMISTRY

Throughout the year. Credit three hours fall term and four hours spring term. Prerequisite, high school chemistry; 107 is prerequisite to 108. Recommended for those students who will take further courses in chemistry but do not intend to specialize in chemistry or closely related fields. Enrollment limited to 700. Lectures, T Th 9 or 10. Combined discussion-laboratory period, M W F or S 8-11, M T W Th or F 1:40-4:30. In spring term, one additional recitation hour as arranged. Scheduled preliminary examinations may be held in the evenings. Messrs. Plane, Sienko and Assistants.

The important chemical principles and facts are covered, with considerable attention given to the quantitative aspects and to the techniques which are important for further work in chemistry. Second-term laboratory includes a simplified scheme of qualitative analysis.

115-116. GENERAL CHEMISTRY AND INORGANIC QUALITATIVE ANALYSIS

Throughout the year. Credit four hours a term. Prerequisite, high school chemistry at a grade of 85 or higher; Chemistry 115 is prerequisite to Chemistry 116. Recommended for students who intend to specialize in chemistry or in closely related fields. Students without good mathematical competence are advised not to take this course. Enrollment limited to 350. Fall term: lectures, M W F 8; one three-hour combined discussion-laboratory period, T or Th 8-11, W or F 10-1, or W or F 1:40-4:30. Spring term: Lectures, M W 8; two three-hour combined discussion-laboratory periods, T Th 8-11, W F 10-1, or W F 1:40-4:30. Mr. Laubengayer and Assistants.

A general study of the laws and concepts of chemistry based upon the more common elements, and application of the theory of chemical equilibrium to the properties and reactions of ions of the common elements and their separation and detection in solution.

205. QUALITATIVE INORGANIC ANALYSIS AND IONIC EQUILIBRIUM

Fall term. Credit four hours. Prerequisite, Chemistry 104 with a grade of 70 or better, or Advanced Placement in Chemistry. Lectures, M W 12. Laboratory, T Th 1:40-4:30 or T Th 8-11. Mr. Zuckerman and Assistants.

Application of the theory of chemical equilibrium to the properties and reactions of the ions of selected elements and the separation and detection of these ions in solution.

236. INTRODUCTORY QUANTITATIVE ANALYSIS

Either term. Credit four hours. Prerequisite, Chemistry 205 or 108 or 116. Required of candidates for the degree of A.B. with a major in chemistry. Enrollment is limited in the spring term. Students are encouraged to register for the fall term if possible. Lectures, M W 10. Laboratory: fall term, M W or T Th 1:40-4:30; spring term, M W or T Th 1:40-4:30, or F 1:40-4:30 and S 9-12. Messrs. Geske, Morrison, and Assistants.

A study of the fundamental principles of quantitative chemistry. Laboratory experiments are designed to illustrate basic principles and practice of quantitative procedures.

276. INTRODUCTION TO PHYSICAL CHEMISTRY

Fall term. Credit three hours, Prerequisites, Chemistry 104 or 108 or 116, Mathematics

192, and Physics 122. For engineering students. M W F 9 or 11. Examinations, Th 7:30 p.m. Mr. Albrecht.

A brief survey of physical chemistry.

285-286. INTRODUCTORY PHYSICAL CHEMISTRY

Throughout the year. Credit five hours a term. Prerequisites, Chemistry 108 or 116, Mathematics 192, Physics 123, or consent of instructor. For students in engineering, not open to Arts and Sciences students. Lectures, M W F 9. Laboratory lecture, F 12. Laboratories: fall term, M 1:40-4:30 and T 10-12:50 or W Th 1:40-4:30; spring term, M T 1:40-4:30 or W Th 1:40-4:30. Messrs. Hughes, Lind and Assistants.

The lectures will give a systematic treatment of the fundamental principles of physical chemistry. The laboratory will deal with the experimental aspects of the subject and also develop the needed skills in quantitative chemical analysis.

353. ELEMENTARY ORGANIC CHEMISTRY

Either term. Credit four hours. Prerequisite, Chemistry 104 at a grade of 70, or 108, or 116. Enrollment limited. Primarily for students in the premedical and biological curricula. Chemistry 355 must be taken with Chemistry 353. Lectures, M W F S 11. Fall term, Mr. Miller. Spring term, instructor to be announced.

An integrated study of aliphatic and aromatic organic compounds, their occurrence, methods of preparation, reactions, and uses. The relationship of organic chemistry to the biological sciences is stressed.

The student should determine the entrance requirements for the particular medical school he wishes to enter. Students may obtain six hours credit by taking Chemistry 353-355. An additional two hours credit in laboratory may be obtained by taking Chemistry 356.

355. ELEMENTARY ORGANIC LABORATORY

Either term. Credit two hours. Must be taken with Chemistry 353. Laboratory, M W or T Th 2-4:30, or F 2-4:30 and S 8:20-10:50. Mr. Usher and Assistants.

Laboratory experiments on the preparation and reactions of typical aliphatic and aromatic organic compounds.

356. ELEMENTARY ORGANIC LABORATORY

Spring term. Credit two hours. Prerequisite, Chemistry 353-355. Enrollment is limited. Laboratory lecture for all sections, S 8. Laboratory, M W or T Th 1:40-4:30, or T Th 8-10:50, or F 1:40-4:30 and S 9-12. Mr. Usher and Assistants.

A continuation of Chemistry 355.

357-358. INTRODUCTORY ORGANIC CHEMISTRY

Throughout the year. Credit five hours a term. Prerequisite, Chemistry 108, or 116, or 205. Chemistry 357 is prerequisite to Chemistry 358. Required of candidates for the degree of B.Ch.E. and A.B. with a major in chemistry. Enrollment limited. Lectures, M W F 9. Laboratory lecture for all sections, S 8. Laboratory: M W or T Th 1:40-4:30, or T Th 8-10:50, or F 1:40-4:30 and S 9-12 (either term). Messrs. Blomquist, Goldstein, and Assistants.

A systematic study of the more important classes of carbon compounds, reactions of their functional groups, methods of synthesis, relations and uses. Laboratory experiments will be carried out on the preparation of typical organic compounds, their properties, reactions, and relations.

380. CHEMICAL BONDING AND PROPERTIES OF ORGANIC MOLECULES

Spring term. Credit three hours. Prerequisite, Chemistry 108, or 116, or 205. Lectures, T Th S 9.

Primarily for students who have had no course in organic chemistry but a good background in physics.

387-388. INTRODUCTORY PHYSICAL CHEMISTRY

Throughout the year. Credit five hours a term. Prerequisites, Chemistry 236, Mathematics 213 or 221, Physics 208, or consent of instructor. Chemistry 387 is prerequisite for Chemistry 388. Required of candidates for the degree of A.B. with a major in chemistry. Lectures, M W F 10. Laboratory: fall term, T 1:40-4:30 or F 1:40-4:30; spring term, M T 1:40-4:30 or W F 1:40-4:30. Laboratory lecture (fall term only), Th 12. Examinations, Th 7:30 p.m. Messrs. Bauer, Hoffman, and Assistants.

A study of the more fundamental principles of physical chemistry from the standpoint of the laws of thermodynamics and of the kinetic theory. The laboratory will consist of experiments illustrating laboratory techniques as well as experiments in classical and modern physical chemistry.

389-390. INTRODUCTORY PHYSICAL CHEMISTRY

Throughout the year. Credit four hours a term. Prerequisites, same as Chemistry 387 and 388, or consent of instructor. Chemistry 389 is prerequisite to Chemistry 390. Lectures, M W F 10. Examinations, Th 7:30 p.m. Mr. Bauer.

The lecture portion of Chemistry 387-388.

410. INORGANIC CHEMISTRY

Spring term. Credit four hours. Prerequisite, Chemistry 286 or 387 or consent of instructor. Chemistry majors are advised to take this course in their junior year. Lectures, M W F 9. Mr. Sienko.

Lectures and assigned readings with emphasis on the application of thermodynamic, kinetic, and structural considerations to inorganic systems.

411. INORGANIC CHEMISTRY LABORATORY

Fall term. Credit four hours. Prerequisite or parallel course, Chemistry 387, or consent of the instructor. Hours to be arranged. Mr. Fay.

Laboratory experiments illustrating the techniques and scope of modern inorganic chemistry.

421. INTRODUCTION TO INORGANIC RESEARCH

Either term. Credit two or four hours. Prerequisites, Chemistry 387-388 or 285-286 at an average of 80 or better and consent of the instructor. Hours to be arranged. Messrs. Fay, Laubengayer, Plane, Sienko, and Zuckerman.

Informal advanced laboratory and library work, planned individually in consultation with a staff member, involving the preparation and characterization of inorganic substances. A written report is required.

426. INSTRUMENTAL ANALYSIS

Spring term. Credit four hours. Prerequisite, Chemistry 285 or 387 or consent of instructor. Enrollment is limited. Laboratory may be taken separately by graduate

students. Lectures, T Th 10. Discussion period to be arranged. Laboratory, one afternoon a week, to be arranged. Mr. Geske and Assistants.

A discussion of the broad aspects of modern analytical chemistry, including optico-metric, electrometric, nuclear and mass spectrometric methods.

433. INTRODUCTION TO ANALYTICAL RESEARCH

Either term. Credit two or four hours. Prerequisite, Chemistry 388 with an average of 80 or better or consent of instructor. Hours to be arranged. Messrs. Cooke, Geske, and Morrison.

Informal research in the field of analytical chemistry involving both laboratory and library work.

456. IDENTIFICATION OF ORGANIC COMPOUNDS

Fall term. Credit four hours. Prerequisite, Chemistry 358. Lectures, T Th 8. Laboratory, T Th 2-4:30, or F 2-4:30 and S 10-12:30. Mr. Farnum and Assistants.

Laboratory experiments in the separation of mixtures of organic compounds and the application of the classification reactions of organic chemistry to the identification of pure organic substances.

457. ADVANCED ORGANIC-ANALYTICAL LABORATORY

Spring term. Credit four hours. Primarily for seniors and graduate students in chemistry. Prerequisites, Chemistry 358 and Chemistry 426, or Chemistry 525, or consent of the instructor. Discussion, T Th 8. Laboratory, three of the following periods: T Th 9-11:30, M T W Th F 1:40-4:30, S 10-12:30. Messrs. Farnum, Geske, and Assistants.

Laboratory problems illustrating the applications of instrumental analytical techniques to organic research.

461. INTRODUCTION TO ORGANIC RESEARCH

Either term. Credit two to four hours. Prerequisites, 456 or 457 and consent of instructor. Primarily for seniors and graduate students as preparation for advanced and independent work. Enrollment limited for undergraduates to those having a record of 80 or better in prerequisite courses. Laboratory and weekly discussion meeting, hours to be arranged. Messrs. Blomquist, Farnum, Goldstein, Meinwald, Miller, Usher, and Wilcox.

465-466. ORGANIC CHEMISTRY

Throughout the year. Credit four hours a term. Prerequisite, Chemistry 358. Chemistry 465 is prerequisite to 466. Primarily for upperclass and graduate students. Enrollment limited for undergraduates to those having a record of 80 or better in previous courses in organic chemistry. Lectures, M W F 12. Discussion, to be arranged. Fall, Mr. Wilcox; spring, Mr. Meinwald.

Fall term: structural theory; resonance; methods of structure determination; conformational analysis and other aspects of stereo-chemistry; introduction to reaction mechanisms; synthesis and characteristic reactions of hydrocarbons. Spring term: synthesis and reactions of the principal classes of organic compounds, with an emphasis on newer developments; the application of mechanistic reasoning to synthetic problems; multi-step syntheses.

[474. PHYSICAL CHEMISTRY OF HIGH POLYMERS

Spring term. Credit four hours. Prerequisite, Chemistry 286 or 388 or consent of

instructor. Primarily for graduate students. Lectures, T Th 8, S 9. Not offered in 1965-1966.]

477. INTRODUCTION TO RESEARCH IN PHYSICAL CHEMISTRY

Credit two to four hours. Prerequisite, Chemistry 388 at an average of 80 or better and consent of instructor. Hours to be arranged. Messrs. Albrecht, Bauer, Fisher, Freed, Hammes, Hoard, Hoffmann, Hughes, Lind, Long, Porter, Scheraga, and Widom.

Informal advanced laboratory and library work in physical chemistry, planned individually in consultation with a staff member.

481. ADVANCED PHYSICAL CHEMISTRY

Fall term. Credit four hours. Prerequisite, Chemistry 286 or 388. Lecture, M W F 9. Discussion section to be arranged. Mr. Hughes.

A discussion of advanced topics in physical chemistry, including an introduction to the principles of quantum theory and statistical mechanics, atomic and molecular spectra, and elementary valence theory.

497-498. HONORS SEMINAR AND RESEARCH

Throughout the year. Credit four hours a term. Prerequisite, admission to the Honors Program. Seminar, W 2. Laboratory hours to be arranged. Messrs. Hoard and Miller.

The seminar will be an informal presentation and discussion of selected topics in which all members participate. Individual research will be on advanced problems in chemistry under the guidance of a staff member. A written report on the research results is required.

505-506. ADVANCED INORGANIC CHEMISTRY

Throughout the year. Credit four hours a term. Prerequisite or parallel course, Chemistry 387-388 or 285-286, or consent of the instructor. Chemistry 505 is prerequisite to Chemistry 506. Open to upperclassmen and graduate students. Lectures, M W F 11. Messrs. Plane and Fay.

Theories of atomic structure and chemical bonding are applied systematically to the elements as they appear in the Periodic System, with emphasis on the stereochemistry of inorganic substances.

515-516. SELECTED TOPICS IN ADVANCED INORGANIC CHEMISTRY

Throughout the year. Credit two hours a term. Students may register for either term separately. Prerequisite, Chemistry 388. Lectures, T Th 12. Messrs. Zuckerman and Freed.

Detailed consideration is given each term to one or two special topics selected from the field of theoretical and experimental inorganic chemistry. Topics are varied from year to year.

525. ADVANCED ANALYTICAL CHEMISTRY

Fall term. Credit four hours. Prerequisite, Chemistry 286 or 388. For graduate students except by consent of the instructor. Lectures, M W F 8. Examinations, T 8 p.m. Mr. Cooke.

The application of molecular spectroscopy to chemical problems. Topics discussed include ultraviolet, infrared, NMR, Raman, and mass spectroscopy.

[527. ADVANCED ANALYTICAL CHEMISTRY

Spring term. Credit four hours. Prerequisite, Chemistry 286 or 388. Primarily for graduate students. Lectures, M W F 8. Mr. Geske.

An intensive examination of contemporary electroanalytical chemistry, electrode kinetics, voltammetry including polarography, coulometry, and chronopotentiometry. Study of chromatographic separation including gas chromatography. Analytical significance of non-aqueous solutions. Offered in alternate years; not offered in 1965-1966.]

565. PHYSICAL ORGANIC CHEMISTRY

Fall term. Credit four hours. Prerequisite, Chemistry 465-466 or consent of instructor. Primarily for graduate students. Lectures, T Th S 12. Mr. Goldstein.

Elucidation and applications of organic reaction mechanisms; quantitative aspects of organic chemistry.

566. PHYSICAL ORGANIC CHEMISTRY

Spring term. Credit three hours. Prerequisite, Chemistry 565 or consent of instructor. Primarily for graduate students. Lectures, T Th 12. Mr. Wilcox.

Quantitative aspects of organic chemistry.

568. CHEMICAL PATHWAYS IN METABOLISM

Fall term. Credit four hours. Prerequisites, Chemistry 358 and 388, or their equivalents. Primarily for graduate students. Lectures, T Th S 8. Mr. Burnham.

Organic and physical chemical aspects of the mechanisms of processes occurring in the metabolism of living systems. This course forms the chemical basis for the graduate program in molecular biology.

[570. SELECTED TOPICS IN ORGANIC CHEMISTRY

Fall term. Credit three hours. Prerequisites, 465-466 or consent of instructor. Primarily for graduate students. Not offered in 1965-1966.]

572. ORGANIC MECHANISMS PERTAINING TO ENZYME CATALYSIS

Spring term. Credit four hours. Prerequisites, Chemistry 465-466 and a course in general biochemistry. Primarily for graduate students in chemistry and biochemistry. Lectures, M W F 11. Mr. Usher.

574. CHEMISTRY OF NATURAL PRODUCTS

Spring term. Credit three hours. Prerequisites, Chemistry 456 or 457, and 465-466. Primarily for graduate students. Lectures, T Th 9 and discussion period, M 4:30. Mr. Meinwald.

Particular attention will be devoted to methods of structure determination and synthesis as applied to selected terpenes, steroids, alkaloids, and antibiotics.

577. ENZYME KINETICS

Fall term. Credit four hours. Prerequisites, Chemistry 358 and 388, or their equivalents. Primarily for graduate students. Lectures, T Th S 8. Mr. Hammes.

Modern theories and techniques for studying the kinetics of enzymatic and related reactions. A discussion of steady-state and relaxation methods will be included.

578. THERMODYNAMICS

Spring term. Credit four hours. Prerequisite, 286 or 388. Primarily for graduate students. Lectures, T Th S 9, and a discussion period to be arranged. Mr. Widom.

Development of the general equations of thermodynamics from the first and second

laws. Applications to the study of physicochemical equilibria in gases, liquids, solids, and liquid solutions. Problems.

580. KINETICS OF CHEMICAL REACTIONS

Fall term. Credit four hours. Prerequisites, Chemistry 481 and 578, or consent of instructor. Lectures, M W F 11 and a discussion period to be arranged. Mr. Hammes.

A general discussion of rates of reactions, including types of reactions, methods of measurement, theories of reaction rates, applications to problems.

582. SPECIAL TOPICS IN MOLECULAR BIOLOGY

Spring term. Credit four hours. Prerequisite, Chemistry 568 or consent of instructor. Primarily for graduate students. Topics to be announced. Lectures, T Th S 12.

Detailed consideration is given to several special topics selected from recent research activity in the field of molecular biology. Topics are varied from year to year.

586. PHYSICAL CHEMISTRY OF PROTEINS

Spring term. Credit four hours. Prerequisite, Chemistry 286 or 388. Primarily for graduate students. Lectures, M W F 8 and S 10. Mr. Scheraga.

Chemical constitution, molecular weight, and structural basis of proteins; thermodynamic, hydrodynamic, optical, and electrical properties; protein and enzyme reactions.

589. X-RAY CRYSTALLOGRAPHY

Fall term. Credit four hours. Prerequisite, Physics 322 or consent of instructor. M W F 12. Mr. Hoard.

Space groups, reciprocal lattices, three-dimensional diffraction, interpretation of X-ray diffraction data, structure determination by Fourier synthesis. Given in alternate years; will not be offered in 1966-1967.

593. INTRODUCTION TO QUANTUM MECHANICS

Fall term. Credit four hours. Prerequisite, consent of instructor. Primarily for graduate students. Lectures M W F 11. Mr. Albrecht.

Elementary presentation of the fundamentals of quantum mechanics.

[594. QUANTUM MECHANICS OF VALENCE

Spring term. Credit four hours. Prerequisite, Chemistry 593 or its equivalent. Primarily for graduate students. Lectures, M W F 9. Given in alternate years; not offered in 1965-1966.]

596. STATISTICAL MECHANICS

Spring term. Credit four hours. Prerequisite, Chemistry 593 or equivalent is desirable but not required. Primarily for graduate students. Lectures, M W F 11. Mr. Widom.

Ensembles and partition functions. Thermodynamic properties of ideal gases and crystals. Third law of thermodynamics, equilibrium constants, vapor pressures, imperfect gases, and virial coefficients. Radial distribution functions. Lattice statistics and phase transitions. Bose-Einstein and Fermi-Dirac ideal gases. Maxwell theory of viscosity and heat conduction.

[598. MOLECULAR SPECTRA

Spring term. Credit four hours. Prerequisite, consent of instructor. Primarily for grad-

uate students majoring in physical chemistry and physics. Lectures, hours to be arranged. Mr. Bauer. Not offered in 1965-1966.]

600. GENERAL CHEMISTRY SEMINAR

Throughout the year. No credit. Th 4:40. A series of talks representative of all fields of current research interest in chemistry, given by advanced graduate students, research associates, faculty members, and distinguished visitors.

601-602. INTRODUCTORY GRADUATE SEMINAR IN ANALYTICAL, INORGANIC, AND PHYSICAL CHEMISTRY

Throughout the year. No credit. Required of all first-year graduate students majoring in analytical, inorganic, physical, or theoretical chemistry, and molecular biology. Hours to be arranged. Messrs. Bauer and Zuckerman.

Weekly seminars on contemporary topics prepared and presented by first-year graduate students. Attention given to details of selecting, preparing, and presenting a given topic. Group preparation and participation emphasized.

650-651. GRADUATE SEMINAR IN ORGANIC CHEMISTRY

Throughout the year. No credit. Open to qualified upperclassmen and graduate students. Required of all graduate students majoring in organic chemistry. M 8 p.m. Mr. Farnum.

700. BAKER LECTURES

T Th 11. Spring term; Professor E. J. Corey, Harvard University.

THE CLASSICS

Mr. G. M. Kirkwood, Chairman; Messrs. H. Caplan, P. H. DeLacy, J. Hutton, P. Pucci, N. Robertson, E. W. Spofford, F. O. Waage.

Those whose major study is in the Classics must complete twenty-four hours of advanced courses in the Department (Greek courses numbered above 201 or Latin courses numbered above 205) and fifteen hours, selected after conference with the adviser, in related subjects. Related subjects for this purpose are ancient history, ancient philosophy, Hebrew, Sanskrit, History of Art 301, 321-322, 421, and selected courses in modern foreign languages and literatures, linguistics, and literature.

Students whose major study is in the Classics with an emphasis on Latin must include in their programs before graduation Latin 205-206, 315-316, and 317-318. By arranging courses early with the School of Education, they may meet the requirements for the N.Y. State certificate for high school teaching.

Those whose major study is in Classical Civilization must complete (a) eighteen hours in Latin or Greek; (b) Literature 305-306, and 307, and eight hours selected from the courses listed below under Classical Civilization; and (c) twelve hours in related subjects. Related subjects for this purpose may be any courses in the humanities but selected in conference with the adviser so as to form a coherent and significant experience in the relation between anti-

quity and subsequent periods in the Western tradition; they may include courses listed under Classical Civilization which have not been used to satisfy requirement (b).

Candidates for the degree of Bachelor of Arts with Honors in Classics or with Honors in Classical Civilization must fulfill the requirements of the appropriate major study, as prescribed in the foregoing paragraphs, and must also complete successfully the special Honors courses 370, 371, and 372. Part of the credit for Honors courses may be included in the twenty-four hours required for the major study. Students who wish to become candidates for Honors and who have a cumulative average of 80 or better should consult some member of the Department before preregistering for the second term of the junior year.

The Distribution I requirement in the Humanities is satisfied in Classics by the following courses: Greek 201 and 203, 203 and 301, 301-302, or 302-306; Latin 112 and 205, 205-206, 315-316, or 317-318; but no course may be used for this requirement if it has been used for the language requirement. For Distribution II, various combinations of the above sequences may be made; groups of courses listed under Classical Civilization may also be used for this requirement, and combinations of courses in Greek and Latin and in translation, for example, Latin 205-206 or Greek 201 and 203 combined with Literature 305-306.

Greek

All Greek courses may count toward upperclass credit.

101. GREEK FOR BEGINNERS

Either term. Credit three hours. M W F 12. Fall term, Mr. Kirkwood. Spring term, Mr. Caplan.

Introduction to Attic Greek. Designed to enable the student to read the ancient authors as soon as possible.

103. ATTIC GREEK

Either term. Credit three hours. Prerequisite, Greek 101. M W F 12. Fall term, Mr. Pucci. Spring term, instructor to be announced.

Continuation of Greek 101, and readings from Xenophon's *Anabasis*.

201. ATTIC AUTHORS: PLATO, APOLOGY; EURIPIDES, MEDEA

Either term. Credit three hours. Prerequisite, Greek 103. T Th S 9. Fall term, instructor to be announced. Spring term, Mr. DeLacy.

Attention is given both to the exact understanding of the Greek texts and to relevant broad literary and historical questions.

203. HOMER

Either term. Credit three hours. Prerequisite, Greek 201. T Th S 10. Fall term, Mr. Hutton. Spring term, Mr. Pucci.

Readings in Homeric epic, study of Homeric dialect, and consideration of such literary problems as the authorship, unity, and style of the epics and their relation to oral and literary epic.

209-210. GREEK COMPOSITION

Throughout the year. Credit one hour a term. Prerequisite, Greek 103 or the equivalent. Th 2.

An exercise course, meeting once a week, to provide review and further study of the forms and, more especially, the syntax of ancient Greek. Recommended as a companion course to Greek 201 and 203.

301-302. SOPHOCLES, ARISTOPHANES, HERODOTUS

Throughout the year. Credit four hours a term. Prerequisite, Greek 203. T Th S 10. Fall term, Mr. Spofford. Spring term, Mr. Robertson.

305-306. LYRIC POETRY, AESCHYLUS, THUCYDIDES,
DEMOSTHENES

Throughout the year. Credit four hours a term. Prerequisite, Greek 301-302. T Th S 9. Fall term, Mr. Robertson. Spring term, Mr. Caplan.

309-310. ADVANCED GREEK COMPOSITION

Throughout the year. Credit one hour a term. Prerequisite, Greek 209-210 or the equivalent. W 2. Mr. Pucci.

[390. GREEK DIALECTS

Credit two hours. Not offered in 1965-1966.]

401-402. INDEPENDENT STUDY

For qualified majors.

581-582. SEMINAR

Throughout the year. Credit four hours a term. For graduate students. Th 2-4. Fall term, Mr. Kirkwood. Spring term, Mr. Pucci.

Fall term: the poetry of Sappho and Alcaeus. Spring term: problems in Euripides.

Latin

Placement in freshman Latin courses is determined both by previous training and by College Board Achievement Test scores.

105-106. LATIN FOR BEGINNERS

Throughout the year. Credit three hours a term. T Th S 11.

An introductory course in the essentials of the Latin language, designed for rapid progress toward reading the principal Latin authors. Selected readings in the second term.

107. FRESHMAN COURSE: SELECTIONS FROM CICERO AND
CATULLUS

Fall term. Credit three hours. Prerequisite, Latin 106 or two units of entrance Latin. T Th S 9.

Begins with a comprehensive but rapid review of the fundamentals of Latin, but is principally a reading course in the two authors.

109. FRESHMAN COURSE: VIRGIL, AENEID

Either term. Credit three hours. Prerequisite, Latin 107 or three units of entrance Latin. Fall term, M W F 9, 11. Spring term, T Th S 9. Mr. Robertson.

Readings in Latin are in Books I to VI. Literary questions concerning the entire poem are studied. Brief review and continuing study of Latin grammar.

111. FRESHMAN COURSE: CICERO, DE SENECTUTE; MARTIAL, EPIGRAMS

Fall term. Credit three hours. Prerequisite, Latin 109 or four units of entrance Latin. M W F 9, 11. Mr. Caplan.

Study of the content, style, and grammar of Cicero's most celebrated essay. Translation and literary study of the poetry of the father of the modern epigram.

112. FRESHMAN COURSE: HORACE, ODES AND EPODES

Spring term. Credit three hours. Prerequisite, Latin 109 or 111 or the equivalent. M W F 9, 11. Messrs. Caplan and Kirkwood.

A comprehensive study of Horace's lyric poetry. Translation and discussion.

205-206. TERENCE, ANDRIA; CATULLUS; HORACE, SATIRES AND EPISTLES; VIRGIL, GEORGICS; LIVY

Throughout the year. Credit three hours a term. Prerequisite, Latin 112 or the equivalent. M W F 10. Fall term, Mr. Pucci. Spring term, Mr. Spofford.

The works read are selected so as to provide a survey of some of the most significant literary styles and types in Republican Latin and the Golden Age.

221-222. LATIN COMPOSITION

Throughout the year. Credit one hour a term. Prerequisite, Latin 112 or special permission. W 2.

An exercise course, meeting once a week, to provide review and further study of the forms and, more especially, the syntax of Latin. Recommended as a companion course to Latin 205-206.

[315-316. THE GREATER REPUBLICAN WRITERS: PLAUTUS, CICERO, SALLUST, LUCRETIUS

Throughout the year. Credit four hours a term. Prerequisite, Latin 205-206. Not offered in 1965-1966. Offered in 1966-1967 and alternate years.]

317-318. LITERATURE OF THE EARLY EMPIRE: TACITUS, ANNALS; JUVENAL; PLINY'S LETTERS; SENECA, LETTERS AND TRAGEDIES

Throughout the year. Credit four hours a term. Prerequisite, Latin 205-206. M W F 10. Offered in 1965-1966 and alternate years. Fall term, Mr. Spofford. Spring term, Mr. Robertson.

321-322. LATIN COMPOSITION

Advanced course. Credit one hour a term. For undergraduates who have completed Latin 221-222 and for graduate students. M 2. Mr. Hutton.

[347. HISTORY OF THE LATIN LANGUAGE

Fall term. Credit two hours. For upperclassmen and graduate students. Not offered in 1965-1966.]

[350. COMPARATIVE GRAMMAR OF GREEK AND LATIN

Spring term. Credit two hours. For upperclassmen and graduate students. Not offered in 1965-1966.]

[369. MEDIEVAL LATIN LITERATURE

Spring term. Credit four hours. Prerequisite, three years of high school Latin or the equivalent. Not offered in 1965-1966.]

[390. ITALIC DIALECTS

Fall term. Credit two hours. For graduate students. Not offered in 1965-1966.]

451-452. INDEPENDENT STUDY

For qualified majors.

581-582. SEMINAR

Throughout the year. Credit four hours a term. For graduate students. W 2-4. Mr. DeLacy.

Fall term: Lucretius and Epicurean philosophy. Spring term: Cicero's *Academica*.

Honors Courses

370. HONORS COURSE

Spring term. Credit four hours. To be taken in the junior year. A program of readings and conferences centered in an author or a topic to be announced before the beginning of the term.

371. HONORS COURSE

Fall term. Credit four hours. To be taken in the senior year. Continuation of 370, with change of author or topic.

372. HONORS COURSE: SENIOR ESSAY

Spring term. Credit four hours. For students who have successfully completed course 371. Topics must be approved by the Honors adviser at the end of the first term of the senior year.

Classical Civilization

[408. CLASSICAL RHETORIC AND ORATORY

Spring term. Credit four hours. Primarily for graduate students. Not offered in 1965-1966.]

ENGLISH TRANSLATIONS OF GREEK AND LATIN CLASSICS

(See Comparative Literature 305-306.)

FOUNDATIONS OF WESTERN THOUGHT

(See Comparative Literature 307.)

HUMANISM AND THE RENAISSANCE

(See Comparative Literature 314.)

PRINCIPLES OF LITERARY CRITICISM

(See Comparative Literature 401.)

GREEK AND ROMAN DRAMA

(See Comparative Literature 404.)

CLASSIC MYTHS

(See Comparative Literature 218.)

ANCIENT HISTORY

(See History 301-302.)

GREEK HISTORY

(See History 432.)

THE HELLENISTIC AGE

(See History 434.)

THE ROMAN REPUBLIC

(See History 431.)

THE ROMAN EMPIRE

(See History 433.)

INTRODUCTION TO ART

(See History of Art 201-202.)

ART OF THE ANCIENT WORLD

(See History of Art 301.)

GREEK SCULPTURE

(See History of Art 321.)

ART OF THE ROMAN EMPIRE

(See History of Art 322.)

ARCHAEOLOGY

(See History of Art 421 and 423.)

COMPARATIVE LITERATURE

Mr. B. E. Pike, Chairman; Messrs. R. M. Adams, B. B. Adams, H. D. Albright, H. Caplan, A. Caputi, Miss Patricia Carden, Messrs. M. A. Carlson, P. H. DeLacy, P. M. de Man, H. Dieckmann, R. M. Durling, J. M. Echols, S. B. Elledge, J. Freccero, G. Gibian, D. I. Grossvogel, G. H. Hartman, M. Horwitz, J. Hutton, R. E. Kaske, G. M. Kirkwood, G. A. McCalmon, E. P. Morris, I. Rabinowitz, H. Shadick, W. D. Shaw, E. W. Spofford, T. W. Stoehr.

The Department of Comparative Literature offers no major program; certain of its courses may, however, be counted toward the major requirements of other departments, at their option. For information consult the English, Classics, French, Russian, and German sections in this Announcement. Distribution requirements in the Humanities may be satisfied by any of the 200 or 300 courses in literature which form a sequence.

201-202. MASTERPIECES OF WESTERN LITERATURE

Throughout the year. Credit three hours a term. For underclassmen; registration limited to 200 students. M W F 9, 10, 11; T Th S 9, 10, 11. Mr. Shaw and others.

Informal discussions of selected great books of the Western tradition. Fall term: *The Iliad*, *The Divine Comedy*, selections from Biblical literature, *Paradise Lost*, and *Faust*. Spring term: selected Greek tragedies, *Antony and Cleopatra*, *King Lear*, *Don Quixote*, *Madame Bovary*, and poems of Donne and Yeats.

205. THE LITERATURE OF THE OLD TESTAMENT

Fall term. Credit three hours. For sophomores and upperclassmen. M W F 9. Mr. Rabinowitz.

Readings, in translation, from books of the Old Testament composed during the pre-exilic period of Israel's history (to c. 520 B.C.). The various genres of classical Hebrew literature, and the ancient Israelite ideas and institutions essential to comprehension of the texts will be studied.

206. THE LITERATURE OF POST-EXILIC JUDAISM

Spring term. Credit three hours. For sophomores and upperclassmen. M W F 9. Mr. Rabinowitz.

Readings, in translation, from the later books of the Old Testament, the apocryphal literature, and the Qumran (Dead Sea) Scrolls. An introduction to the thought of the culture which produced both normative Judaism and early Christianity.

[218. CLASSIC MYTHS

Spring term. Credit three hours. For sophomores and upperclassmen. T Th S 10. Mr. Kirkwood. Not offered in 1965-1966.]

221-222. MASTERPIECES OF RUSSIAN LITERATURE

Throughout the year. Credit three hours a term. First term prerequisite to the second. M W F 12. Miss Carden.

Fall term: Russian legends, chronicles, stories. Griboedov, Pushkin, Gogol, Leskov, Aksakov, and Turgenev. Spring term: Dostoevsky, Tolstoy, Chekhov, Babel and Sholokhov.

301-302. DRAMA AND THE THEATRE

Throughout the year. Credit four hours a term. Students with specialized interest in drama or the theatre should elect this course, preferably as early as the sophomore year. M W F 11. Fall term, Mr. Carlson. Spring term, Mr. Albright.

An introduction to representative types and forms of drama as interpreted in the theatre, designed to increase appreciation of the drama as literature and of the theatre as art form and social institution. Development of the physical stage and of the changing theories and techniques of theatrical production in the important stylistic periods from the Greeks to the present will be traced.

303-304. THE LITERATURE OF EUROPE

Throughout the year. Credit four hours a term. First term prerequisite to the second. T Th S 10. Fall term, Mr. B. B. Adams. Spring term, Mr. R. M. Adams.

Fall term: reading of such representative authors as Chaucer, Boccaccio, Malory, Erasmus, Castiglione, Machiavelli, Rabelais, Montaigne, Shakespeare, and Donne. Spring term: reading of such representative authors as Pope, Rousseau, Byron, Stendhal, Dostoevsky, Verlaine, Nietzsche, Ibsen, Shaw, and Babel.

305-306. ENGLISH TRANSLATIONS OF GREEK AND LATIN CLASSICS

Throughout the year. Credit four hours a term. First term prerequisite to the second. For upperclassmen only. T 2-4 or Th 2-4, and an hour to be arranged. Fall term, Mr. Hutton. Spring term, instructor to be announced.

Rapid reading in the best translations with emphasis upon Greek masterpieces, for example, the *Iliad* and the *Odyssey*, the tragedies of Sophocles, and several dialogues of Plato. Translations from the Latin will be chosen for the bearing of the original works upon modern literature.

307. FOUNDATIONS OF WESTERN THOUGHT

Fall term. Credit four hours. For sophomores and upperclassmen. T Th S 11. Mr. DeLacy.

Introduction to the attitudes, concepts, and methods that characterized intellectual movements in ancient Greece, with special emphasis on the fifth and fourth centuries B.C. Selected writings of Greek poets, historians, philosophers, and scientists will be read in English translation.

309-310. THE MODERN EUROPEAN NOVEL

Throughout the year. Credit four hours a term. M W F 12.

First semester: works by Cervantes, Richardson, Hoffman, Tolstoy, Flaubert, Proust, Joyce, and Kafka. Second semester: works by such authors as Chrétien de Troyes, Prévost, Sterne, Austen, Stendhal, Goncharov, Gide, Svevo, Celine, and Mann. Permission of the instructor required to take the second semester without the first.

311. THE RUSSIAN NOVEL

Fall term. Credit four hours. T Th S 9.

Works by Turgenev, Dostoevsky, and Tolstoy.

312. SOVIET LITERATURE

Spring term. Credit four hours. M W F 10. Mr. Horwitz.

An introduction to selected works of Russian literature, from 1917 to date, examined as social and historical documents and as works of art.

[314. HUMANISM AND THE RENAISSANCE

Spring term. Credit four hours. M W F 10. Mr. Hutton. Will not be offered in 1965-1966.]

315-316. MEDIEVAL LITERATURE

Throughout the year. Credit four hours a term. M W F 12. Fall term, Mr. Kaske
Spring term, Mr. Freccero.

Fall term: analysis and interpretation of great medieval literary works in translation. Though readings will vary somewhat from year to year, a typical program would be *Beowulf*; *Chanson de Roland*; *Njassaga*; a romance of Chrétien; Wolfram's *Parzival*; Gottfried's *Tristan*, and/or *Sir Gawain and the Green Knight*; *Pearl*; *Piers Plowman*.
Spring term: Dante and his circle. Lectures, discussions, and reports.

318. SOUTHEAST ASIAN LITERATURE IN TRANSLATION

Fall term. Credit four hours. T 2-4. Mr. Echols.

A survey of the literatures of Southeast Asia with some attention to several masterpieces.

321. CHINESE HISTORICAL AND PHILOSOPHICAL LITERATURE
IN TRANSLATION

Fall term. Credit three hours. M W F 10. Mr. Shadick.

Philosophical and historical literature, including Confucian, Taoist, and Buddhist writings.

322. CHINESE IMAGINATIVE LITERATURE IN TRANSLATION

Spring term. Credit three hours. M W F 10. Mr. Shadick.

Imaginative literature, including poetry, classical prose, fiction, drama, and the new writing of the twentieth century.

[329. FORM AND EXPRESSION IN THE ARTS OF THE TWENTIETH
CENTURY

Fall term. Credit four hours. T Th S 10. Mr. Grossvogel. Not offered in 1965-1966.]

[330. IDEA AND FORM IN TWENTIETH-CENTURY EUROPEAN
LITERATURE

Spring term. Credit four hours. T Th S 10. Not offered in 1965-1966.]

401. PRINCIPLES OF LITERARY CRITICISM

Fall term. Credit four hours. M 2-4 or W 2-4. Mr. Caplan.

Theories of Greek and Roman criticism. Spring term: see English 468 (English Literary Critics).

404. GREEK AND ROMAN DRAMA

Spring term. Credit four hours. T Th S 10. Mr. Kirkwood.

Primarily a study, by lecture and discussion, of the evolution of forms and meanings in ancient tragedy and comedy as exemplified by the works of Aeschylus, Sophocles, Euripides, Aristophanes, Menander, Plautus, Terence, and Seneca. Representative plays are read in translation. Consideration is given also to the origins of tragedy and com-

edy, their connection with myth and ritual and with other literary forms, and to the ancient theater and its stage at various periods.

[405. THEORY AND PRACTICE OF TRANSLATION

Fall term. Credit four hours. M W 11. Mr. R. Adams. Not offered in 1965-1966.]

407. VARIATIONS ON A LITERARY THEME

Fall term. Credit four hours. M W 11. Mr. R. Adams. The topic for 1965-66 will be "the Age of Gold."

[409. POST-SYMBOLIST POETRY

Fall term. Credit four hours. M W F 10. Mr. de Man. Not offered in 1965-1966.]

411. MODERN GERMAN LITERATURE

Spring term. Credit four hours. Enrollment limited to 35. Consent of instructor required. M W F 11. Mr. Pike.

An intensive study of major works of Rilke, Mann, and Kafka, to be read in English translation.

501-502. TOPICS IN COMPARATIVE LITERATURE

Throughout the year. Credit four hours a term. Primarily for graduate students in comparative literature. Hours to be arranged. Mr. Hartmann.

Fall term: seminar on the history of methods of literary interpretation. Spring term: some aspects of European Romanticism.

PHILOSOPHY IN LITERATURE

(See Philosophy 310.)

ANCIENT HISTORY

(See History 301-302.)

MEDIEVAL HISTORY

(See History 303-304.)

ENGLISH HISTORY FROM ANGLO-SAXON TIMES TO THE PRESENT

(See History 307-308.)

ECONOMICS

Mr. F. H. Golay, Chairman; Messrs. G. P. Adams, Jr., S. E. Berki, M. G. Clark, T. E. Davis, M. G. de Chazeau, D. F. Dowd, W. D. Evans, L. M. Falkson, G. H. Hildebrand, J. G. B. Hutchins, A. E. Kahn, R. W. Kilpatrick, J. R. LaPittus, T. C. Liu, C. Morse, D. E. Novack, P. M. O'Leary, M. Perlman, R. T. Selden, T. Sowell, G. J. Staller, B. P. Stigum, J. Vanek.

Students wishing to major in economics must have completed both Economics 103 and Economics 104 and, moreover, must have averaged at least 75 in these two courses. Students who have completed only Economics 103 may

be provisionally accepted, but only if they have obtained a grade of 80 or better. Freshmen intending to major in economics are advised to begin the course sequence, Economics 103-104, no later than their second term in residence. The Distribution I requirements should be completed by the end of the sophomore year. Prospective majors are advised to consider as possible electives Principles of Accounting (Business and Public Administration 110S), Introductory Statistics (Agricultural Economics 111) and some work in calculus. These courses will contribute materially to preparation for advanced work in economics. Students proposing to major in economics should report to the secretary of the Department with a transcript of courses.

To complete the major, twenty-eight hours of economics courses in addition to Economics 103-104 must be completed, including Economics 311 and 312. In addition, majors in economics will be expected to complete a minimum of three advanced courses in subjects related to economics, selected with the approval of major advisers from the offerings of the Department of American Studies, Anthropology, Asian Studies, Government, History, Mathematics, Philosophy, (Social) Psychology, and Sociology. Prospective majors should therefore anticipate any prerequisites these advanced courses may require, and complete them in their freshman or sophomore year. Programs of related subjects should complement programs of courses in economics, and both must be arranged in consultation with advisers.

Candidates for the degree of Bachelor of Arts with Honors in Economics will enroll in the Honors seminar. They will be expected to complete thirty-two hours of advanced courses in economics, including the Honors seminar, and all courses required of majors.

Students seeking admission to the Honors seminar should consult their advisers not later than November 1 of their junior year. Application will not normally be considered from students whose cumulative average is less than 80 in both their general studies and their courses in economics.

A comprehensive Honors examination, both written and oral, will be given to Honors candidates at the end of their senior year. Honors candidates may be exempted from final examinations in their other courses in economics at the end of their senior year.

The Distribution I requirement in Social Sciences is satisfied in economics by Economics 103-104 or Economics 201-202.

I. Introductory

103. MODERN ECONOMIC SOCIETY

Either term. Credit three hours. Fall term: large lectures, M W 9, T Th 9, 11, plus additional discussion sections (scheduled throughout the week). Spring term: independent sections, M W F 8, 9, 10, 11; T Th S 8, 11. Messrs. Dowd, Selden, Novack and Assistants.

A survey of the existing economic order, with particular emphasis on the salient characteristics of the modern American economy. Concentration is on explaining and evaluating the operation of the price system as it regulates production, distribution, and consumption, and as it is in turn modified and influenced by private organization and government policy.

104. MODERN ECONOMIC SOCIETY

Either term. Credit three hours. Fall term: independent sections, M W F 8, 9, 10, 11; T Th S 8, 11. Spring term: large lectures, M W 9, T Th 9, 11, plus additional discussion sections (scheduled throughout the week). Honors sections: either term. Hours to be arranged. Messrs. Kahn, Staller, Novack, and Assistants.

Economics 104, a continuation of 103, centers on the determinants of aggregate economic activity. The main areas studied are the monetary and banking systems, the composition and fluctuations of national income, and the major conditions of economic growth, all as influenced by monetary, fiscal, and other policies.

201-202. ELEMENTARY ECONOMICS

Throughout the year. Credit three hours a term. M W F 10. Mr. Berki. Not open to students who have taken Economics 103-104.

An intensive introductory course. In 201 the emphasis is on the theory and operation of the price system, specifically applied to some major sectors of the American economy. The operations of competition and public policy in the product and labor markets are examined. In 202 the emphasis is on the theories of national income determination, stability, and growth. The current performance of the American economy is analyzed in context of the world economy with special attention to the problems of unemployment, impeded growth, the balance of payments, and relations with underdeveloped economies. Open to non-majors, and to majors with the permission of the instructor, who have had one year of calculus.

II. Economic History

321. ECONOMIC HISTORY OF ANCIENT AND MEDIEVAL EUROPE

Fall term. Credit four hours. Open to upperclassmen with some background in economics or history, or with consent of the instructor. M W F 10. Mr. Dowd.

An examination and analysis of significant processes and relationships in the economic development of Europe in the ancient and medieval periods. Attention will be given to reciprocal relationships between the social and political context and the behavior of the economy over time.

322. ECONOMIC HISTORY OF MODERN EUROPE

Spring term. Credit four hours. Prerequisite, same as for 321. M W F 10. Mr. Dowd. The period covered is from the close of the Middle Ages to the present.

323. AMERICAN ECONOMIC HISTORY

Fall term. Credit four hours. Prerequisites, Economics 103-104 or consent of the instructor. T Th 2-3:15. Mr. Novack.

Analysis of the major features of the development of the American economy from the late colonial period to the present. Particular stress will be placed upon the functional relationship between structural changes in the economy and political, demographic, and social variables.

324. AMERICAN ECONOMIC HISTORY

Spring term. Credit four hours. Prerequisites, same as for 323. T Th 2-3:15. Mr. Novack. Continuation of 323.

[325. ECONOMIC HISTORY OF LATIN AMERICA

Fall term. Credit four hours. Open to upperclassmen with some background in economics or history, or with consent of the instructor. T Th S 10. Mr. Davis. Not offered in 1965-1966.]

ECONOMIC AND BUSINESS HISTORY (BUSINESS & PUBLIC ADMINISTRATION 375)

Fall term. Credit three hours. Limited to seniors who have completed Economics 103-104. M W F 9. Mr. Hutchins.

A study of the evolution of economic organization and of the role of the business firm therein. Although some attention is given to earlier times, the primary emphasis is on the period since 1750. The analysis of the development of business organization, administration, and policy proceeds in part by means of historical case studies. Attention is paid to the relations between business policies and the rise and fall of firms and industries, and to the interactions of business and public policies. The primary focus is on the United States, but European origins and developments are included when significant.

See also Economics 333, 521-522, 523-524, 621-622, 624.

III. Contemporary Economic Institutions, Practices and Problems

A. MONEY, BANKING, AND PUBLIC FINANCE

231. MONEY, BANKING, AND PUBLIC POLICY

Fall term. Credit three hours. Prerequisite, Economics 103-104. T Th S 10. Mr. Perlman.

A study of the American financial system with emphasis on the roles played by commercial banks, the federal reserve system, and selected related financial institutions. Monetary, credit, and financial controls influencing general economic stability will be examined. Primarily for non-majors.

331. THE ECONOMICS OF MONEY AND CREDIT

Fall term. Credit four hours. Prerequisite, Economics 103-104. M W F 2. Mr. La Pittus.

A systematic treatment of the determinants of the money supply and the volume of credit. Economic analysis of credit markets and financial institutions in the United States.

333. FINANCIAL HISTORY OF THE UNITED STATES

Fall term. Credit four hours. Prerequisites, Economics 103-104 and three hours of American history. M W F 11. Mr. O'Leary.

The development of American financial institutions, problems, and legislation from 1650 through 1940. Monetary media, banking systems and operations, public finance, and certain private financial institutions will be examined against the changing background of the American political and economic system. Lectures, library readings, and reports.

335. PUBLIC FINANCE: RESOURCE ALLOCATION

Fall term. Credit four hours. Prerequisite, Economics 103-104. T Th S 9. Mr. Kilpatrick.

An analysis of the role of government in allocating resources through taxes and expenditures. Criteria for evaluation will be developed and applied to specific policies. Attention will focus on the federal government.

338. MACROECONOMIC POLICY

Spring term. Credit four hours. Prerequisite, Economics 312. M W F 11. Mr. Selden.

A study of the use of fiscal and monetary policies for achieving economic stability and growth.

See also Economics 631-632, 633-634, 635-636.

B. LABOR ECONOMICS**341. ECONOMICS AND PROBLEMS OF LABOR**

Fall term. Credit four hours. Prerequisite, Economics 103-104 or the consent of the instructor. M W F 9. Mr. Hildebrand.

A survey of the field of labor economics; an analysis of the basic industrial-relations problems emerging from modern economic arrangements; and an examination of the economic and other implications of various employer, trade-union, and government attacks upon these problems.

See also Economics 311, 413, 641-642. Also, I&LR 241 is recommended.

C. ORGANIZATION, PERFORMANCE, AND CONTROL OF INDUSTRY**351. PRIVATE ENTERPRISE AND PUBLIC POLICY**

Fall term. Credit four hours. Prerequisite, Economics 103-104. M W F 9. Mr. Kahn.

The approach to public policy in a private enterprise system in the light of the economist's concepts of competition and monopoly. Economic bases for delineating the public and private sectors and the public regulatory function. An analysis and appraisal of the prevalence and effectiveness of competition in the American economy, with particular emphasis on the business organization, the price, production, and marketing policies, and the economic performance of a range of industries characterized by varying degrees of market concentration and governmental intervention.

352. PUBLIC REGULATION OF BUSINESS

Spring term. Credit four hours. Prerequisite, Economics 351 or consent of the instructor. M W F 9. Mr. Berki.

A continuation of Economics 351, concentrating mainly on public policies of enforcing, supplementing, or replacing competition, with specific studies of selected industries and recent legal cases.

TRANSPORTATION: RATES AND REGULATION (BUSINESS & PUBLIC ADMINISTRATION 575)

Fall term. Credit three hours. Limited to seniors who have taken Economics 103-104 or the equivalent. M W F 10. Mr. Hutchins.

A study of American transportation focused on economic organization, public policy, and the rate-making process. The emphasis is on the theory and practice of

rate making in an environment complicated by fixed, joint, and common costs, by competition among differing modes of transport, and by complex patterns of regulation.

TRANSPORTATION: ORGANIZATION, ADMINISTRATION AND PUBLIC POLICIES (BUSINESS & PUBLIC ADMINISTRATION 576)

Spring term. Credit three hours. Limited to seniors who have completed Economics 103-104. M W F 10. Mr. Hutchins.

A continuation of B&PA 575 dealing with problems of organization, administration, and public policy in the various segments of transportation: merchant shipping, air transport, motor carrier transport, domestic water transport, and railroad reorganization. Cases are used to bring out some of the problems.

355. CORPORATE ENTERPRISE IN THE AMERICAN ECONOMY

Either term. Credit three hours. Prerequisite, Economics 103-104. Fall term, T Th S 10. Spring term, M W F 11. Mr. O'Leary.

An examination of the large American business corporation as an economic institution. Attention will be given to the corporation as the dominant device for ordering the allocation and administering the use of economic resources in the United States. Among the topics treated will be separation of ownership and management; segments of interest; reinvestment of earnings and the savings-investment process; the impact of taxation on basic decisions; the various types of corporation securities; government regulation; the public benefit corporation as a special case.

See also B&PA 375, Economics 341, 312, 521-522, 523-524, 621-622, 631-632, 633-634, 651-652, 653.

D. INTERNATIONAL AND COMPARATIVE ECONOMICS

361. INTERNATIONAL TRADE THEORY AND POLICY

Fall term. Credit four hours. Prerequisite, Economics 103-104 or consent of the instructor. M W F 10. Mr. Vanek.

Survey of the principles that have served as guides in the formulation of international trade and commercial policies. The evolution of the theory of international trade, principles and practices of commercial policy, problems of regional integration and customs unions, and institutions and practices of state trading will be emphasized.

362. INTERNATIONAL MONETARY THEORY AND POLICY

Spring term. Credit four hours. Prerequisite, Economics 103-104 or consent of the instructor. M W F 9. Mr. Davis.

Survey of the principles that have served as guides in the formulation of international financial policies. The evolution of the theory of balance of payments adjustment, international monetary standards, the nature of conflicts arising out of the relationship between domestic economic policies and external economic relations, international capital movements, economic aid, international monetary institutions, and proposals for international monetary reforms will be emphasized.

[364. THE UNITED STATES IN THE WORLD ECONOMY

Spring term. Credit four hours. M W F 9. Mr. Golay. Not offered in 1965-1966.]

[365. COMPARATIVE ECONOMIC SYSTEMS: JAPAN, INDIA, CHINA
Spring term. Credit four hours. M W F 9. Mr. Golay. Not offered in 1965-1966.]

367. COMPARATIVE ECONOMIC SYSTEMS: SOVIET UNION AND EUROPE

Fall term. Credit four hours. Prerequisites, Economics 103-104 and I&LR 445 or consent of the instructor. M W F 11. Mr. Staller.

Discussion of the rationality and feasibility of economic planning (von Mises, Hayek, Lange). Examination of the various approaches to planning, including the discussion of the planning techniques, in countries such as France, Yugoslavia, and the Soviet Union (with emphasis on the last country). Comparison of economic performance of various free and planned economies: stability, resource utilization, and growth of industrial and agricultural production, consumption, investment, foreign trade, and total output. Consideration of economic competition between the free and the planned systems.

COMPARATIVE ECONOMIC SYSTEMS: SOVIET RUSSIA (INDUSTRIAL AND LABOR RELATIONS 445)

Spring term. Credit four hours. Prerequisite, Economics 103-104 or consent of the instructor. T Th 2-3:30. Mr. Clark.

A comparative analysis of the principles, structure, and performance of the economy of Soviet Russia. Special attention will be devoted to industry and labor, and to the international impact of Soviet economic development.

See also Economics 321, 325, 521-522, 561, 565, 571-572, 621-622, 661-662, 671-672, 675.

E. ECONOMIC GROWTH AND DEVELOPMENT

371. PUBLIC POLICY AND ECONOMIC DEVELOPMENT

Fall term. Credit four hours. Prerequisite, Economics 103-104 or consent of instructor. M W F 9.

Study of the role of the state in initiating and maintaining accelerated economic growth in less developed countries. Problems of capital accumulation, interaction of culture change and economic growth, outside participation in economic modernization, and the role of international specialization are emphasized.

372. PROCESSES OF ECONOMIC GROWTH AND DEVELOPMENT

Spring term. Credit four hours. Prerequisite, Economics 103-104 or consent of the instructor. T Th S 10. Mr. Morse.

A consideration of various contributions by economists and others to an understanding of how societies undergo economic growth and institutional change. Developing countries are the main focus of attention, most detailed consideration being given to Africa. Some possibilities of combining elements from economics and other fields to form a broad approach to economic development are explored.

See also Economics 321-322, 323, 325, 361-362, 365, 367, 561, 565, 571-572, 661-662, 671-672, 675 and I & LR 445.

IV. Economic Theory

311. INTERMEDIATE MICROECONOMIC THEORY

Either term. Credit four hours. Required of all students majoring in economics. Prerequisite, Economics 103-104. Fall term: M W F 10, T Th 2-3:15, T Th S 10. Spring term: M W F 10. Messrs. Liu, Morse, Perlman, Sowell.

Analysis of the pricing processes in a private enterprise economy under varying competitive conditions, their role in the allocation of resources, and the functional distribution of national income.

312. INTERMEDIATE MACROECONOMIC ANALYSIS

Either term. Credit four hours. Required of all students majoring in economics. Prerequisite, Economics 103-104 or consent of instructor. Fall term: M W F 2. Spring term: M W F 11, 2, T Th S 9. Messrs. LaPittus, Kilpatrick, Sowell, Perlman.

An introduction to the theory of national income determination and economic growth in alternative models of the national economy; the interaction and relation of aspects of these models to empirical aggregate economic analysis.

315-316. HISTORY OF ECONOMIC THOUGHT

Throughout the year. Credit four hours a term. With the consent of the instructor the first term need not be prerequisite to the second. Fall term: W 2-4, Mr. Adams. Spring term: T Th 2-3:15, Mr. Sowell.

A survey of the development of economic ideas from the early modern period to the twentieth century. Extensive readings from the Mercantilists, Smith, Ricardo, Mill, and Marshall, with class discussion of these. Supplementary readings from other men and schools will provide material for reports and term papers.

[413. DISSENTING ECONOMIC DOCTRINES AND PROTEST MOVEMENTS

Fall term. Credit two hours. Th 2-4. Mr. Hildebrand. Not offered in 1965-1966.]

415. NATIONAL INCOME AND WEALTH

Spring term. Credit four hours. Prerequisites, Economics 103-104. Students planning to enroll in 415 are advised to take Agricultural Economics 111 and Business and Public Administration 110S. M W 2-3:15. Mr. Evans.

Social accounting with special emphasis on the U.S. National Income and Product Accounts and Flow of Funds Accounts. Other major statistical measurements used in aggregative analysis. Illustrations of the ways aggregate measurements have been used and problems illustrating their use. The course is intended to prepare students for advanced work in aggregative analysis.

417. INTRODUCTION TO MATHEMATICAL ECONOMICS

Fall term. Credit four hours. Prerequisite, Economics 311 and consent of the instructor. M W 2-3:15. Mr. Evans.

Application of elementary mathematical techniques to economic analysis.

V. Honors

390. HONORS SEMINAR

Spring term. Credit three hours. Required of all juniors who plan to be candidates for Honors. M 2-4. Mr. Hildebrand and Staff.

Readings in books which have been significant in the development of economics.

391-392. HONORS SEMINAR

Throughout the year. Credit three hours in fall, six hours in spring. Required of all seniors who are candidates for Honors. Fall term, M 2-4. Spring term, hours to be arranged. Mr. Adams and Staff.

Continuation of Economics 390, together with the writing of an Honors thesis and preparation for the comprehensive Honors examinations.

399. READINGS IN ECONOMICS

Either term. Credit two hours each term. Any member of the Department.

Graduate Courses and Seminars

511. PRICE AND ALLOCATION THEORY

Fall term. Credit four hours. Prerequisite, consent of the instructor. Hours to be arranged. Mr. Liu.

Theories of utility, demand, production, and pricing, with special emphasis on recent developments.

512. MACROECONOMIC THEORY

Spring term. Credit four hours. Prerequisite, consent of the instructor. Hours to be arranged. Mr. Vanek.

Analysis of the determination of national income, the price level, and economic growth.

521-522. EUROPEAN ECONOMIC HISTORY

Throughout the year. Credit four hours a term. Hours to be arranged. Mr. Dowd.

523-524. AMERICAN ECONOMIC HISTORY

Throughout the year. Credit four hours a term. Hours to be arranged. Mr. Novack.

561-562. INTERNATIONAL ECONOMIC THEORY AND POLICY

Throughout the year. Credit four hours a term. Hours to be arranged. Messrs. Vanek and Davis.

[565. ECONOMIC PROBLEMS OF LATIN AMERICA

Spring term. Credit four hours. Hours to be arranged. Mr. Davis. Not offered in 1965-1966.]

571-572. ECONOMIC GROWTH AND DEVELOPMENT

Throughout the year. Credit four hours a term. Hours to be arranged. Fall term, instructor to be announced. Spring term, Mr. Morse.

[610. ADVANCED MICROECONOMIC THEORY

Spring term. Mr. Falkson. Not offered in 1965-1966.]

613-614. HISTORY OF ECONOMIC THOUGHT

Throughout the year. Messrs. Adams and Sowell.

[615. BUSINESS CYCLES AND GROWTH

Not offered in 1965-1966.]

616. INTERMEDIATE MATHEMATICAL ECONOMICS

Spring term. Mr. Falkson.

617-618. MATHEMATICAL ECONOMICS

Throughout the year. Mr. Stigum.

619-620. ECONOMETRICS

Throughout the year. Mr. Liu.

SEMINAR IN ECONOMIC STATISTICS (INDUSTRIAL AND LABOR
RELATIONS 610)

Fall term. Mr. Evans.

621-622. EUROPEAN ECONOMIC HISTORY

Throughout the year. Mr. Dowd.

623. AMERICAN ECONOMIC HISTORY

Fall term. Mr. Novack.

631-632. MONETARY THEORY AND POLICY

Throughout the year. Mr. Selden.

633-634. FINANCIAL THEORY, HISTORY, AND POLICY

Throughout the year. Mr. O'Leary. Given only in spring term, 1965-1966.

635-636. PUBLIC FINANCE: THEORY AND POLICY

Throughout the year. Mr. Kilpatrick.

637-638. ECONOMICS OF WATER RESOURCE DEVELOPMENT

Throughout the year. Mr. Falkson.

639-640. WATER RESOURCE PLANNING

Throughout the year. Mr. Falkson.

641-642. LABOR ECONOMICS

Throughout the year. Mr. Hildebrand. Given only in fall term, 1965-1966.

651-652. INDUSTRIAL ORGANIZATION AND REGULATION

Throughout the year. Mr. Kahn.

653. TRANSPORTATION

Fall term. Mr. Hutchins.

661-662. INTERNATIONAL ECONOMICS

Throughout the year. Mr. Vanek.

671-672. ECONOMICS OF DEVELOPMENT

Throughout the year. Mr. Morse and instructor to be announced.

673-674. ECONOMIC PLANNING

Throughout the year. Mr. Staller.

676. THE ECONOMY OF CHINA

Spring term.

[678. ECONOMIC GROWTH IN SOUTHEAST ASIA

Spring term. Mr. Golay. Not offered in 1965-1966.]

ENGLISH

Mr. W. M. Sale, Jr., Chairman; Messrs. M. H. Abrams, B. B. Adams, R. M. Adams, A. R. Ammons, Miss Judith Anderson, Mr. D. N. Archibald, Miss Evelyn Barish, Mr. J. P. Bishop, Mrs. Jean Blackall, Messrs. A. Caputi, M. J. Colacurcio, G. F. Cronkhite, V. A. DeLuca, R. M. Durling, D. D. Eddy, R. H. Elias, S. B. Elledge, F. G. Fike, J. A. Finch, E. G. Fogel, K. C. Frederick, P. A. Gottschalk, G. H. Hartman, B. L. Hathaway, G. H. Healey, N. Hertz, Mrs. Judith Herz, Mrs. Carol Kaske, Messrs. R. E. Kaske, S. R. Katz, D. W. Kleine, Miss Carol Marks, Messrs. R. W. Mayberry, J. R. McConkey, H. S. McMillin, Mrs. Dorothy Mermin, Mrs. Kathleen Mervin, Messrs. F. E. Mineka, A. M. Mizener, D. Novarr, S. M. Parrish, F. C. Robinson, E. Rosenberg, Miss Nancy Rothwax, Messrs. W. D. Shaw, M. Shinagel, W. J. Slatoff, T. W. Stoehr, C. S. Strout.

The student majoring in English is required to complete an introduction to the history of English literature (English 251-252 or 351-352) and a minimum of eight upperclass courses or seminars in English. English 251-252 or 351-352 must be completed by the end of the sophomore year. The eight upperclass courses or seminars, each of which must carry four hours of credit, should be taken at the rate of two per term during the student's last four terms of residence. Of these eight courses, a minimum of three must be at the 400 level or above. No 400-level course may be taken until the student has passed two 300-level courses and has registered for a third 300-level course. Eight hours of work in writing at the upperclass level may be included in the minimum requirement for the major. Eight hours of courses in Comparative

Literature may be counted toward the major, provided these are approved by the student's adviser as correlating with courses elected within the Department of English.

A few suggestions for students majoring in English may be secured from the Department Office, 245 Goldwin Smith. Students who wish to be accepted for the regular major as distinct from the Honors major should apply to the Chairman of the Department in the ten-day period before preregistration in the second term of the sophomore year. Students wishing to be considered for the Honors program should apply to the Chairman of the Department during the ten-day period before preregistration in the second term of their freshman year, though a few applicants can usually be considered in the second term of their sophomore year. If provisionally accepted as freshmen, they should include English 351-352 in their programs for the sophomore year. Final acceptance will be determined at the end of the sophomore year, but those provisionally accepted may include English 491 in the junior year program and if finally accepted must register in order for English 492, 493, and 494. All applicants for a major in English, both regular and Honors, must by the end of the sophomore year have (1) completed the Distribution I requirements; (2) completed six hours of study in a foreign language in courses for which Qualification is prerequisite; and (3) achieved grades of at least 75 in all courses in English taken during the two underclass years.

Prospective teachers of English in secondary schools who seek temporary certification in New York State must fulfill all the requirements of the major. In addition they must elect a special program of professional courses offered by the Department and the School of Education. A detailed statement concerning the preparation of teachers is available in the Department of English office.

For students not majoring in English, the Department attempts to make available a variety of courses at all levels. Courses at the 200 level are open to sophomores without prerequisite. Courses at the 300 level, some carrying three hours and some carrying four hours of credit, are open to juniors and seniors. Courses at the 400 level, unless a further prerequisite is stated in the course description, are open to students who have completed two four-hour, 300-level courses in English and are currently registered for a third; non-majors with exceptional qualifications may apply to the Chairman for relief from this requirement.

DISTRIBUTION REQUIREMENTS

The Distribution I requirement in the Humanities is satisfied in English by English 213-214, English 225-226, English 251-252 (restricted to English majors), English 255-256, or English 351-352 (restricted to English Honors candidates).

The following courses are recommended for students who wish to use English to satisfy all or part of the Distribution II requirements: English 225-226, English 255-256, English 343, 344, or 345; or any pair of closely related upperclass courses. Some examples of such pairs of upperclass courses follow: English 320 and 423, dealing with the same period of literary history;

English 336 and 439 dealing with a single literary genre; English 329 and 474, 478, or 481, dealing with American literature. Students wishing to satisfy Distribution II with 14 or more hours in English cannot include more than six hours of 200-level courses.

Courses for Freshmen

The Department offers three courses in English for freshmen. English 111-112 is the regular course. Freshmen who are candidates for advanced credit as attested by entrance examinations and by distinguished work in secondary schools may be placed in English 119-120. A smaller number of especially outstanding freshmen will be placed in English 213-214. If so placed, students whose performance meets the standards of the course will be awarded three hours of advanced standing credit in English 119-120 and six hours of advanced standing credit in English 213-214.

111-112. INTRODUCTION TO ENGLISH

Throughout the year. Credit three hours a term. English 111 is prerequisite to English 112. M W F 8, 9, 10, 11, 12, 2, 3; T Th S 8, 9, 10, 11, 12. Mr. McConkey and others.

Practice in writing. Careful study of works by a small number of selected modern writers.

119-120. FORMS OF EXPRESSION

Throughout the year. Credit three hours a term. English 119 is prerequisite to English 120. M W F 9, 10, 12, 2; T Th S 9, 11. Mr. Slatoff and others.

A more intensive version of English 111-112 for freshmen who are candidates for advanced credit as attested by entrance examinations and by distinguished work in secondary schools. Students whose writing meets the standards of the course will be recommended for three hours of advanced credit in English composition.

213-214. INTRODUCTION TO LITERATURE

Throughout the year. Credit three hours a term. First term prerequisite to second. Open only to specially qualified freshmen. M W F 11, 2, 3. Mr. Sale and others.

An introductory course in the study of the various forms of literature. For freshmen who are candidates for advanced credit as attested by entrance examinations and by distinguished work in secondary schools. The course will satisfy Distribution Requirement I in the humanities. Students whose writing meets the standards of the course will be recommended for six hours of advanced standing credit in English composition.

MASTERWORKS OF WESTERN LITERATURE

(See Comparative Literature 201-202.)

Literature 202 may be elected in the spring term by freshmen with the permission of the director of the course. Literature 202, followed by Literature 201, may be used to satisfy the Distribution I requirement in the Humanities.

English as a Second Language

The following two courses are offered by the Division of Modern Languages. Foreign students should consult a member of that Division in 108 Morrill Hall.

102. ENGLISH AS A SECOND LANGUAGE

Fall term. Credit three hours. Prerequisite, placement by the instructor. Daily at 10.

211-212. ENGLISH AS A SECOND LANGUAGE

Throughout the year. Credit three hours a term. Prerequisite, placement by the instructor. M W F 11.

Intermediate Courses

203. SPECIAL FORMS OF WRITING

Either term. Credit three hours. Prerequisite, English 111-112 or the equivalent. Fall term, M W 12 or T Th 10, and conferences to be arranged. Spring term, M W 9 or T Th 10, and conferences to be arranged. Sections limited to fifteen. Mr. Hathaway and others.

An introductory course in the practice of writing narrative, verse, and allied forms.

204. SPECIAL FORMS OF WRITING

Either term. Credit three hours. Prerequisite, English 203 or consent of the instructor. Fall term, M W 12 and conferences to be arranged. Spring term, M W 12 or T Th 12, and conferences to be arranged. Sections limited to fifteen. Mr. Hathaway and others.

A continuation of English 203; practice in writing narrative, verse, and allied forms.

205-206. ADVANCED COMPOSITION

Throughout the year. Credit three hours a term. English 111-112 or its equivalent prerequisite to English 205. English 205 or consent of the instructor prerequisite to English 206. M W F 9; T Th S 10. Mr. Mineka and others.

For sophomores and upperclassmen who, having performed creditably in English 111-112 (or its equivalent), desire to carry on work in expository writing. Practice in writing; individual conferences.

225-226. THE TWENTIETH CENTURY

Throughout the year. Credit three hours a term. First term not prerequisite to the second. Not open to freshmen. M W F 2. Fall term, Mr. Frederick. Spring term, Mr. Kleine.

British and American writers. Fall term: Dreiser, O'Neill, Joyce, Yeats, Lawrence, Forster, and others. Spring term: Frost, Eliot, Auden, Huxley, Waugh, Hemingway, Faulkner, and others.

[229-230. THE AMERICAN LITERARY HERITAGE

Throughout the year. Credit three hours a term. M W 10 and discussion sections to be arranged. Not offered in 1965-1966.]

251-252. GREAT ENGLISH WRITERS

Throughout the year. Credit four hours a term. English 251 prerequisite to English 252. Fall term, T Th 11 and discussion sections to be arranged. Mr. Abrams and others. Spring term, section meetings three times a week, M W F 2, 3, T Th S, 11. Mr. Hertz and others.

Studies in selected works of great English writers, Chaucer to the twentieth century. Open only to prospective majors in English, who should take this course in the sophomore year.

255-256. BRITISH LITERATURE

Throughout the year. Credit three hours a term. English 255 is prerequisite to English 256. T Th S 12. Mr. Healey.

A study of works by notable English, Scottish, and Irish authors from the time of Chaucer to that of Yeats. First term: from Chaucer to Boswell. Second term: from Burns to Yeats.

351-352. THE ENGLISH LITERARY TRADITION

Throughout the year. Credit four hours a term. English 351 prerequisite to English 352. M W F 2. Mr. Finch and others.

A consideration of the English literary tradition through a careful study of three or four major authors in each period from the time of Chaucer to the present. Open only to provisional candidates for Honors in English, who should take this course in the sophomore year.

Courses for Upperclassmen

These courses are strictly limited to upperclassmen with the following exception: Students who are candidates for Honors may elect one 300-level course in the second term of their sophomore year.

Three courses—English 343, 344, and 345—carry three hours credit each and are especially designed for non-majors. All other 300- and 400-level courses carry four hours credit. Courses at the 400-level are open only to students who have taken two four-hour 300-level courses in English and are registered for a third. Non-majors with exceptional qualifications may apply to the Chairman for relief from this requirement.

309. THE RENAISSANCE

Fall term. Credit four hours. M W F 9. Mr. Fogel.

The main traditions in English poetry from 1530 to 1660. Background readings in the prose of the period.

[314. LITERATURE OF THE EIGHTEENTH CENTURY

Spring term. Credit four hours. T Th S 9. Not offered in 1965-1966.]

315. THE ENGLISH NOVEL IN THE EIGHTEENTH CENTURY

Fall term. Credit four hours. T Th S 9. Mr. Shinagel.

The rise of the novel surveyed through a critical study of selected works by the five major novelists (Defoe, Richardson, Fielding, Sterne, and Smollett) as well as by some representative minor novelists.

317. THE ROMANTIC POETS

Fall term. Credit four hours. T Th S 11. Mr. Parrish.

The nature of Romanticism, arrived at through a reading of the major poets: Blake, Wordsworth, Coleridge, Byron, Shelley, and Keats.

320. THE VICTORIANS

Spring term. Credit four hours. T Th S 11. Mr. Fike.

The major poets and prose writers from Carlyle to Bernard Shaw, studied in relation to the thought of the time and to literature of the twentieth century.

323. THE ANGLO-IRISH LITERARY TRADITION

Fall term. Credit four hours. M W F 12. Mr. Archibald.

A study of major works by Anglo-Irish writers from Jonathan Swift to Yeats and Joyce.

324. THE NINETEENTH-CENTURY ENGLISH NOVEL

Spring term. Credit four hours. T Th S 10. Mr. Rosenberg.

In 1965-1966 the emphasis will be on the fiction of Jane Austen and Charles Dickens.

329. THE GROWTH OF AMERICAN LITERATURE

Fall term. Credit four hours. Not open to students who have taken English 333. M W F 10. Mr. Colacurcio.

A survey of the important ideas and literary forms in American literature from the Puritan beginnings through the American Renaissance. This course is designed for students who plan to go on to the more specialized courses in American writers and writing.

333. MAJOR AMERICAN WRITERS OF THE NINETEENTH CENTURY

Fall term. Credit four hours. Not open to students who have taken English 229 or 230. M W F 2. Mr. Bishop.

A brief survey of the course of American literature and a more detailed study of Poe, Emerson, Thoreau, Hawthorne, Dickinson, Melville, Whitman, Mark Twain, Adams, James, and Crane. This course is designed primarily for students seeking a one-term course in American literature of the last century.

334. THE NEW WORLD AND THE OLD

Spring term. Credit four hours. M W F 12. Mr. Strout.

American literature and politics, considered in relation to developments in England and Europe. Among the American writers studied will be Irving, Longfellow, Cooper, Hawthorne, Mark Twain, James, and Hemingway.

336. THE MODERN AMERICAN NOVEL

Spring term. Credit four hours. M W F 10. Mr. Sale.

A critical study of American fiction, beginning with Howells and James and concluding with selected contemporary novels.

[338. THE MODERN ENGLISH NOVEL

Spring term. Credit four hours. M W F 10. Not offered in 1965-1966.]

340. REPRESENTATIVE ENGLISH DRAMAS

Spring term. Credit four hours. M W F 11. Mr. Caputi.

A study of the principal traditions in the English drama (excluding Shakespeare) from the Middle Ages to the present century.

DRAMA AND THE THEATRE

(See Comparative Literature 301-302.)

343. FORMS OF FICTION

Fall term. Credit three hours. M W F 10. Mr. Hathaway.

A study of the forms of narrative in both prose and verse. Special attention will be given to the short story in the twentieth century.

[344. SIX MAJOR POETS

Spring term. Credit three hours. M W F 9. Not offered in 1965-1966.]

345. MODERN DRAMA

Fall term. Credit three hours. M W F 9. Mr. McMillin.

A study of the playwrights of this century, with some attention to continental backgrounds and special emphasis on Shaw, Yeats, O'Casey, O'Neill, and Miller.

366. CHAUCER

Spring term. Credit four hours. M W F 12. Mr. Kaske.

Reading and critical analysis: *Troilus* and a large selection from the *Canterbury Tales*.

368. SHAKESPEARE

Spring term. Credit four hours. M W F 11. Mr. Fogel.

An introduction to the works of Shakespeare, based on a selection of plays representative of the stages of his artistic development and the range of his achievement.

371. MILTON

Fall term. Credit four hours. M W F 11. Mr. Elledge.

Intensive study of Milton's poetry and selected prose with special reference to *Paradise Lost*.

[381. MODERN ENGLISH GRAMMAR

Fall term. Credit four hours. M W F 12. Not offered in 1965-1966.]

383. THE ENGLISH LANGUAGE

Fall term. Credit four hours. T Th S 11. Mr. Robinson.

A historical and topical analysis of the development of English, from its beginnings to the present.

385-386. NARRATIVE WRITING

Throughout the year. Credit four hours a term. Prerequisite, English 204 or 206 or consent of the instructor. T Th 12 and conferences to be arranged. Fall term, Mr. Slatoff, Spring term, Mr. Rosenberg.

A course in the writing of fiction; study of models; analysis of students' work.

[388. VERSE WRITING

Spring term. Credit four hours. Prerequisite, consent of the instructor. T Th 2-3:30. Not offered in 1965-1966.]

406. THE EARLIEST ENGLISH LITERATURE

Spring term. Credit four hours. M W F 10. Mr. Robinson.

Cultural backgrounds, reading, and critical analysis of Anglo-Saxon poetry in translation, pagan and Christian epic, elegy, heroic legend, and other forms. Attention will be given to the relations of this literature to that of later periods.

407. THE ENGLISH LYRIC

Fall term. Credit four hours. T Th S 9. Mr. Fike.

Close reading of the short English poem, in a variety of traditional and experimental forms.

410. ELIZABETHANS AND METAPHYSICALS

Spring term. Credit four hours. T Th S 9. Mr. Novarr.

Emphasis on genre and technique in the poetry of Donne, Jonson, Marvell, and Dryden.

416. SWIFT, POPE, AND THE NEOCLASSIC TRADITION

Spring term. Credit four hours. T Th S 9. Mr. Shinagel.

A close examination of the major works of Swift, Pope, and their contemporaries.

418. MASTERWORKS OF THE ROMANTIC PERIOD

Spring term. Credit four hours. T Th S 10. Mr. Finch.

A critical study of major Romantic achievements in various forms: Blake's *The Four Zoas*, Wordsworth's *Prelude*, Shelley's *Prometheus Unbound*, Byron's *Don Juan*, Emily Brontë's *Wuthering Heights*.

420. ELIZABETHAN AND JACOBEAN DRAMA

Spring term. Credit four hours. T Th S 11. Mr. McMillin.

Critical study of plays by Marlowe, Marston, Jonson, Webster, Beaumont, Fletcher, Ford, and others. The development of dramatic forms and the main currents of ideas in dramatic representation by contemporaries of Shakespeare and Donne.

423. MAJOR VICTORIAN POETS

Fall term. Credit four hours. T Th S 11. Mr. Shaw.

The poetry of Tennyson, Browning, and Arnold, and a brief survey of the Pre-Raphaelites.

426. LATE VICTORIAN AND EDWARDIAN LITERATURE
(1890-1914)

Spring term. Credit four hours. T Th S 10. Mr. Parrish.

The ways in which such writers as Hopkins and Housman, Hardy and Moore, Wilde and Shaw, Beerbohm and Wells changed Victorian attitudes and influenced our own.

439. STUDIES IN THE NOVEL

Fall term. Credit four hours. Prerequisite, English 336. M W F 12. Mr. Slatoff.
In 1965 the emphasis will be on the fiction of William Faulkner.

441. RESTORATION AND EIGHTEENTH-CENTURY DRAMA

Fall term. Credit four hours. T Th S 10. Mr. Eddy.
The drama from Wycherley and Congreve to Goldsmith and Sheridan.

449. AMERICAN POETRY SINCE 1896

Fall term. Credit four hours. M W F 10. Mr. Elias.
Robinson, Frost, and Jeffers in the context of naturalism, with emphasis on the longer poems and the possibilities of narrative poetry.

466. SIXTEENTH-CENTURY POETRY AND PROSE

Spring term. Credit four hours. M W F 9. Miss Rothwax.
Major works in the pastoral, romance, and heroic forms, through Spenser. There will be some reading in Italian literature in translation.

468. ENGLISH LITERARY CRITICS

Spring term. Credit four hours. M W F 11. Mr. Elledge.
Sidney, Dryden, Johnson, Coleridge, and others, with emphasis on the art of their criticism.

469. SHAKESPEARE

Fall term. Credit four hours. Prerequisite, English 368. M W F 11. Mr. Caputi.
An intensive study of three or four of Shakespeare's plays.

472. RELIGION IN AMERICAN LITERATURE AND CULTURE

Spring term. Credit four hours. M W F 10. Mr. Strout.
The evolution from Puritanism to Pluralism as it affected literature, thought, and society.

473. THE POLITICAL NOVEL IN AMERICA

Fall term. Credit four hours. M W F 9. Mr. Strout.
American politics and the art of fiction in such writers as Cooper, Adams, James, and Warren.

474. TRANSCENDENTALISM IN AMERICAN LITERATURE

Spring term. Credit four hours. M W F 11. Mr. Bishop.
In 1965-1966 the concentration will be on Thoreau and his milieu.

478. READINGS IN NINETEENTH-CENTURY AMERICAN AUTHORS

Spring term. Credit four hours. M W F 9. Mr. Colacurcio.
The fiction of Hawthorne and Melville in the context of post-Puritan idealism.

481. HENRY JAMES AND MARK TWAIN

Fall term. Credit four hours. T Th S 10. Mrs. Blackall.
An intensive examination of selected texts of these major American writers, with

special attention to their portrayal of the American character, their methods, and their points of view.

485. STUDIES IN MODERN LITERATURE

Fall term. Credit four hours. M W F 11. Mr. Hartman.

In 1965-66 emphasis will be on the persistence and alteration of the Romantic tradition in poetry, from the later nineteenth century to the present.

490. MODERN THEORIES OF POETRY

Spring term. Credit four hours. T Th 2. Mr. Ammons.

Each student will select a poet and examine the relations between his theory and practice.

495-496. SEMINAR IN WRITING

Throughout the year. Credit four hours a term. Prerequisite, English 385-386 or consent of the instructor. W 2-4. Fall term, Mr. Katz. Spring term, Mr. McConkey.

For advanced writing students who should be prepared to complete during the year a writing project in verse, narrative, or essay. Exploration of principles of literary theory pertinent to projects undertaken.

PRINCIPLES OF LITERARY CRITICISM

(See Comparative Literature 401.)

THE TEACHING OF ENGLISH

(Education 440E.)

Either term. Credit four hours. Taught jointly by the Department of English and the School of Education. M 2-4. Miss Peard.

Emphasis on the teaching of reading, writing, and language. Undergraduates accepted for the English-teaching program should register for this course in the term immediately prior to that in which their practice teaching is scheduled; all others must see Miss Peard before registering.

Honors Courses

Students should apply to the Chairman of the Department for provisional acceptance as candidates for a degree with Honors in English during the ten-day period before preregistration in the second term of their freshman year. A few applicants, however, can usually be considered in the second term of their sophomore year. These students will elect English 491 and 492 in the junior year, English 493 (the Honors Essay Tutorial) in the fall term of the senior year, and English 494 in the spring term of the senior year. Other courses will be selected in consultation with their advisers. In the spring term of the senior year an Honors examination will be given on three selected literary works, the titles of which will be announced in ample time for the student to prepare for this examination.

491. HONORS COURSE: REPRESENTATIVE FORMS OF FICTION

Fall term. Credit four hours. T Th 2-4. Mr. McConkey and others.

492. HONORS COURSE: SHAKESPEARE

Spring term. Credit four hours. T Th 2-4. Mr. Elledge and others.

493. HONORS ESSAY TUTORIAL

Fall term. Credit four hours. Hours to be arranged. Mrs. Blackall and others.

494. HONORS COURSE: THE CRITICISM OF POETRY

Spring term. Credit four hours. M W 2-4. Mr. Robert Adams and others.

Graduate Courses

These courses are for graduate students and a few especially qualified undergraduates. All students must secure the consent of the instructor before registering in any of them. Those courses preceded by an asterisk are seminars with a limited enrollment. Fall term courses, with odd numbers 501-549, are listed first, followed by spring term courses, with even numbers beginning with 550.

501. READINGS IN OLD ENGLISH

Fall term. Credit four hours. Mr. Robinson.

Elements of Old English grammar and readings in the shorter literary texts.

503. MIDDLE ENGLISH

Fall term. Credit four hours. Mr. Kaske.

Reading and critical analysis of major works, excluding Chaucer and the drama.

505. PHILOLOGICAL PROBLEMS IN THE STUDY OF ENGLISH LITERATURE

Fall term. Credit four hours. Mr. Robinson.

An examination of major developments in the English language from Middle English to the present and a consideration of the problems which these changes present in the reading of literary texts.

507. THEORY OF PROSE

Fall term. Credit four hours. Mr. Elledge.

Some important texts in the history of rhetoric from Plato to DeQuincey, with emphasis on English theory of prose style.

509. MEDIEVAL DRAMA

Fall term. Credit four hours. Mr. Barry Adams.

Dramatic forms and traditions from the liturgical drama to the Elizabethan period.

*511. SHAKESPEARE

Fall term. Credit four hours. Mr. Fogel.

Critical and scholarly problems in the interpretation of the early tragedies, with special emphasis on *Richard III* and *Romeo and Juliet*.

[513. SPENSER AND THE RENAISSANCE TRADITION

Fall term. Credit four hours. Not offered in 1965-1966.]

515. STUDIES IN RENAISSANCE LITERATURE

Fall term. Credit four hours. Mr. Robert Adams.

The advent of neo-classic taste in England.

*517. THE ROMANTIC PERIOD

Fall term. Credit four hours. Mr. Abrams.

Structure and imagery in the longer Romantic poems.

519. VICTORIAN POETRY

Fall term. Credit four hours. Mr. Mineka.

Major emphasis upon Tennyson, Browning, and Arnold, but with some study of other Victorian poets.

523. STUDIES IN EARLY AMERICAN LITERATURE

Fall term. Credit four hours. Mr. Colacurcio.

The origin of American *belles lettres* in colonial ideas and European forms.

525. CLIMATES OF OPINION IN AMERICAN THOUGHT AND LITERATURE

Fall term. Credit four hours. Mr. Strout.

Tradition and revolt in Puritanism, the Enlightenment, and the Romantic movement.

529. AMERICAN POETRY

Fall term. Credit four hours. Mr. Elias.

A study of Walt Whitman's development, poetic and intellectual, with attention to biographical, critical, and textual controversies.

531. DRAMATIC LITERATURE

Fall term. Credit four hours. Mr. Caputi.

In 1965-1966 a study of comedy.

549-550. CREATIVE WRITING

Throughout the year. Credit four hours a term. Mr. Hathaway.

Practical criticism of "workshop" type focused on the major writing projects of the group.

552. INTRODUCTION TO ADVANCED RESEARCH

Spring term. Credit four hours. Mr. Fogel.

A study of methods and materials relevant to the solution of problems in scholarly and critical interpretation. For candidates for the Ph.D. degree.

554. BEOWULF

Spring term. Credit four hours. Prerequisite, English 501. Mr. Robinson.

A reading of the poem in Old English and discussion of the literary problems which it presents.

556. CHAUCER

Spring term. Credit four hours. Mr. Kaske.

Reading and critical analysis, with emphasis on *Troilus* and *Canterbury Tales*.

*558. STUDIES IN MEDIEVAL LITERATURE

Spring term. Credit four hours. Mr. Kaske.

Advanced research in English (or other) medieval literature.

*562. STUDIES IN THE SEVENTEENTH CENTURY

Spring term. Credit four hours. Mr. Novarr.

The poetry and prose of John Donne. Intensive examination of scholarly and critical work pertinent to an understanding of Donne and of the late Renaissance.

[564. SEVENTEENTH-CENTURY LITERATURE

Spring term. Credit four hours. Will be offered in 1966-1967.]

566. MILTON

Spring term. Credit four hours. Mr. Elledge.

Intensive study of Milton's poetry and selected prose with special reference to *Paradise Lost*.

568. EIGHTEENTH-CENTURY LITERATURE

Spring term. Credit four hours. Mr. Eddy.

In 1965-1966 the emphasis will be on the writings of Alexander Pope.

570. THE LATER EIGHTEENTH CENTURY

Spring term. Credit four hours. Mr. Hartman.

Tradition and innovation in the poetry of the Age of Sensibility, from Dodsley's *Miscellany* to the *Lyrical Ballads*.

*572. WORDSWORTH

Spring term. Credit four hours. Mr. Parrish.

Critical and textual studies based upon the Dove Cottage manuscript archive.

574. VICTORIAN PROSE

Spring term. Credit four hours. Mrs. Mermin.

Non-fictional prose from Carlyle to Pater, with particular attention to Ruskin and Arnold.

580. STUDIES IN ENGLISH FICTION

Spring term. Credit four hours. Mr. Slatoff.

In 1965-1966 the emphasis will be on the fiction of Joseph Conrad.

582. CLIMATES OF OPINION IN AMERICAN THOUGHT AND LITERATURE

Spring term. Credit four hours. Mr. Strout.

Naturalism, humanism, pragmatism.

584. NINETEENTH-CENTURY AMERICAN FICTION

Spring term. Credit four hours. Mr. Cronkhite.

Selected fiction by Poe, Hawthorne, and Melville; evaluation of relevant criticism.

586. AMERICAN FICTION

Spring term. Credit four hours. Mr. Frederick.

The rise of American realism and naturalism in the period between the Civil War and World War I.

590. LITERARY CRITICISM

Spring term. Credit four hours. Mr. Stochr.

New concepts from language theory. Topic for 1965-1966: the language of American fiction.

594. GRAMMATICAL ANALYSIS

Spring term. Credit four hours. Mr. Hathaway.

Study of the structures of English revealed in the transformation of the basic components of predications.

598. MASTER'S ESSAY

Spring term. Credit four hours. Members of the Department.

GEOLOGY AND GEOGRAPHY

Mr. J. W. Wells, Chairman; Messrs. A. L. Bloom, W. S. Cole, G. A. Kiersch, W. E. LeMasurier, E. S. Lenker.

For admission to a major in geology, students should complete Geology 101-102, Mathematics 111-112, and General Chemistry 107-108, and obtain permission from the departmental major adviser. It is recommended that potential majors complete the following: Physics 207-208; a three-credit-hour course in mechanical drawing; and a two-credit-hour course in plane surveying.

Upon acceptance as a major the minimum requirements are: (1) Geology 322, 351-352, 441, 471-472, and 490; (2) two elective courses in geology numbered 300 or higher; and (3) six semester hours' credit at an approved summer field camp.

Students considering graduate study in paleontology should elect a distribution sequence of four courses in zoology, whereas those planning graduate study in the physical aspects of geology should select distribution sequences from mathematics, physics, chemistry, or engineering.

The Distribution I requirement in Physical Sciences is satisfied in geology by Geology 101-102.

Any of the following sequences are recommended for non-majors who wish to satisfy the Distribution II requirements in geology or geography: Geography 212, 312, 314, Geology 441; Geology 201, 202, 471, 472; Geology 351, 352, and 461, 462 or 451, 452; Geology 322, 421, 441, 542.

Geography

UNDERCLASS COURSES

111. EARTH SCIENCE

Fall term. Credit three hours (but see Earth Science Laboratory 113). Recommended in combination with Geology 106 as a comprehensive introduction to the earth sciences. Lectures, M W F 9. Mr. Bloom.

Physical geography, including the spacial relationships of the earth, moon, and sun that determine the figure of the earth, time, seasons, atmospheric and oceanic circulation, and climates.

113. EARTH SCIENCE LABORATORY

Fall term. Credit one hour. To be taken concurrently with Earth Science 111. Laboratory W 2-4:30. Mr. Bloom.

Observation and calculation of daily, monthly, and seasonal celestial events; topographical mapping and map interpretation; world climatic regions. Enrollment limited to twenty students, preference given to those preparing for earth science teaching.

211. MINERAL RESOURCES

Fall term. Credit three hours. Lectures, M W F 11. Mr. LeMasurier.

Utilization and our dependence upon mineral resources; their nature, occurrence, distribution, and availability at home and abroad. Political and economic aspects of their availability and control.

UPPERCLASS AND GRADUATE COURSES

312. GEOGRAPHY OF ANGLO-AMERICA

Spring term. Credit four hours. Prerequisite, Geography 111, or Geology 102. Lectures, M W F 9, and additional assigned problems. Mr. Bloom. Alternate-year course; offered in 1965-1966.

The geographic provinces of Anglo-America, their geomorphic expression, climates, resources, development, and interrelationships.

[314. CONTINENTAL GEOGRAPHY

Spring term. Credit four hours. Prerequisites, Geography 111, or Geology 102. Lectures, M W F 9, and additional assigned problems. Mr. Bloom. Alternate-year course; not offered in 1965-1966.]

610. SPECIAL WORK

Throughout the year. Credit variable. Prerequisite, consent of the instructor. Staff.

Special or original investigations in geography on the graduate level.

Geology

UNDERCLASS COURSES

101-102. GENERAL GEOLOGY

Throughout the year. Geology 101 prerequisite to Geology 102. Credit three hours a semester (if taken after Geology 103 or Geology 106, one hour credit the first se-

mester). For students in Arts and Sciences. Lectures, T Th 11. Scheduled preliminary examinations will be held at 7:30 p.m. twice each term. Laboratory, M T W Th or F 2-4:30. Messrs. Cole and Wells.

Introduction to the various aspects of geologic science: mineralogic, lithologic, geomorphic, structural, glacial, historic, and economic. For geology majors and others desiring a comprehensive survey of earth science.

106. ELEMENTARY GEOLOGY

Spring term. Credit three hours. Recommended in combination with Earth Science 111 as a comprehensive introduction to the earth sciences. Lectures, T Th 11. Laboratory, M T W Th F 2-4:30. Mr. LeMasurier.

Physical geology, emphasizing the structure of the earth, origin of minerals and rocks, their alteration into soil, and the genesis of the earth's landscape. Broad review of the geologic history of the earth.

201. HISTORIC GEOLOGY

Fall term. Credit three hours. Prerequisite, Geology 102 or 106. Lectures, M W 9. Laboratory, W 2-4:30. Mr. Wells. Alternate-year course; offered in 1965-1966.

Geologic history of the earth with special reference to North America. For geology majors and others desiring a broad view of the physical and organic history of the earth. Four afternoon and two all-day field trips.

202. ANCIENT LIFE

Spring term. Credit three hours. No prerequisite, but Geology 102 or Geology 106 is desirable. Lectures, M W F 11. Mr. Wells.

A cultural course devoted to a review of the fossil remains of life in the geologic past as the main basis of the concept of organic evolution. Vertebrate forms from fish to man are stressed.

UPPERCLASS AND GRADUATE COURSES

303. GEOLOGY FOR ENGINEERS

Fall term. Credit four hours (if taken after Geology 101-102 or 106, one hour credit). Lectures, T Th 9. Laboratory, M W 2-4:30 or T Th 2-4:30. Field trips. Mr. Kiersch.

The principles of geologic science with emphasis on the physical phenomena, rock properties, and historical events important in applied science. The cause and effect of geologic problems encountered in the construction and operation of engineering works are analyzed in the laboratory.

Structural Geology and Sedimentation

322. STRUCTURAL GEOLOGY

Spring term. Credit four hours. Prerequisite, Geology 102; Geology 352 recommended. Lectures, M W 11. Laboratory, M 2-4:30, and additional assigned problems. Field trips. Mr. Kiersch.

Nature, origin, and recognition of geologic structures. Behavior of geologic materials, stress mechanics, and tectonic principles applied to the solution of geologic problems. Analysis of structural features by three-dimensional methods.

[421. SEDIMENTATION

Fall term. Credit four hours. Prerequisite, Geology 352; Geology 441 recommended. For majors in geology and others interested in engineering problems related to sedimentation and surficial deposits. Lectures, M W 11. Laboratory, M 2-4:30, and additional laboratory work. Field trips. Mr. Kiersch. Alternate-year course; not offered in 1965-1966.]

Geomorphology and Glacial Geology

441. GEOMORPHOLOGY

Fall term. Credit four hours. Prerequisite, Geology 102. Lectures, T Th 9. Laboratory, T 2-4:30, and additional assigned problems. Mr. Bloom.

Description and interpretation of land forms in terms of structure, process, and stage.

542. GLACIAL AND PLEISTOCENE GEOLOGY

Spring term. Credit three hours. Prerequisite, Geology 441. Lectures, T Th 9. Laboratory, T 2-4:30. Several Saturday field trips. Mr. Bloom.

Glacial processes and deposits and the stratigraphy of the Pleistocene.

Mineralogy, Petrology, and Geochemistry

351. MINERALOGY

Fall term. Credit four hours. Prerequisite, Chemistry 108. Lecture, M 10. Laboratories, W F 2-4:30, and additional assigned problems. Mr. Lenker.

Crystallography, crystal chemistry, and systematic mineralogy of the ore and rock-forming minerals.

352. PETROLOGY

Spring term. Credit four hours. Prerequisite, Geology 351. Prerequisite or parallel, Geology 102. Lectures, M F 10. Laboratory, Th 2-4:30, and additional assigned problems. Mr. Lenker.

Composition, classification, and origin of igneous, sedimentary, and metamorphic rocks.

451. OPTICAL MINERALOGY

Fall term. Credit four hours. Prerequisite, Geology 351. Lecture, W 12. Laboratories, M T 2-4:30, and additional assigned problems. Mr. Lenker. Alternate-year course; offered in 1965-1966.

Optical properties of crystals and their application to the determination and study of common rock-forming minerals with the petrographic microscope.

452. OPTICAL PETROGRAPHY

Spring term. Credit four hours. Prerequisites, Geology 352 and 451. Lecture, W 12. Laboratories, M T 2-4:30, and additional assigned problems. Mr. Lenker. Alternate-year course; offered in 1965-1966.

Description, classification, and determination of the origin of igneous, metamorphic, and sedimentary rocks by the use of the petrographic microscope.

[551. GEOCHEMISTRY

Fall term. Credit three hours. Prerequisite, Geology 352. Lectures, M W F 8. Mr. Lenker. Alternate-year course; not offered in 1965-1966.]

[554. X-RAY ANALYSIS

Spring term. Credit two hours. Prerequisite, Geology 352 or consent of instructor. Lecture, W 12. Laboratory, F 2-4:30. Mr. Lenker. Alternate-year course; not offered in 1965-1966.]

Paleontology and Stratigraphy

471. INVERTEBRATE PALEONTOLOGY

Fall term. Credit four hours. Prerequisites, Geology 102, and, if possible, invertebrate zoology. For majors in geology and others interested in fossil evidence of the development of organisms. Lectures, T Th 10. Laboratory, W Th 2-4:30. Mr. Cole.

Paleobiology and classification of important fossil invertebrates.

472. BIOSTRATIGRAPHY

Spring term. Credit four hours. Prerequisite, Geology 471. Lectures, T Th 10. Laboratory, W 2-4:30, and additional assigned problems. Mr. Wells.

Zone fossils, faunas, and faunal provinces of the geologic periods.

571-572. STRATIGRAPHY

Throughout the year. Credit three hours a term. Prerequisites, Geology 102, 471. Lectures, fall term, T Th 9, and W 7:30 p.m. Spring term, T W Th 9. Messrs. Cole and Wells.

Principles of stratigraphy developed by detailed study of selected American and European systemic examples. Fall term: the Paleozoic. Spring term: the Mesozoic and Cenozoic.

671. MICROPALAEONTOLOGY

Spring term. Credit two hours. Prerequisite, Geology 472, 571, 572. Lecture W 9. Laboratory, W 2-4:30, and additional assigned problems. Mr. Cole.

Microfossils, chiefly Foraminifera.

672. STRATIGRAPHY OF NEW YORK STATE

Spring term. Credit three hours. Prerequisite, Geology 571. Lectures, T Th 12, early in the term, followed by all-day and weekend field trips. Mr. Wells. Alternate-year course; offered in 1965-1966.

The classic Paleozoic sections of New York studied through lectures, readings, and field observation.

Metalliferous and Non-Metalliferous Deposits

461. MINERAL DEPOSITS—METALS

Fall term. Credit four hours. Prerequisites, Geology 102 or 303, 351. Lectures, M W F 10. Laboratory, F 2-4:30. Mr. LeMasurier.

Principles and processes involved in the formation of mineral deposits. Modes of occurrence, origin, distribution, and utilization of the major, rare, and minor metals.

462. MINERAL DEPOSITS—NON-METALS

Spring term. Credit four hours. Prerequisite, Geology 461. Lectures, M W F 10. Laboratory, F 2-4:30. Mr. LeMasurier.

Properties, occurrence, associations, distribution, and economic utilization of the industrial minerals and rocks.

561-562. ADVANCED STUDY OF MINERAL DEPOSITS

Throughout the year. Credit three hours a term. Prerequisite, Geology 462. Lectures, M W F 8. Alternate-year course; offered in 1965-1966.

Occurrence and origin of economically important mineral deposits. Fall term: deposits of primary origin. Spring term: deposits of secondary origin.

[563. ORE MICROSCOPY

Fall term. Credit two hours. Prerequisite, Geology 351. Laboratory, F S 8-10:30. Alternate-year course; not offered in 1965-1966.]

Ground Water and Engineering Geology

[532. GROUNDWATER GEOLOGY

Spring term. Credit three hours. Prerequisites, Geology 322, 352; recommended, Geology 421 and 441. Lectures M W 11. Laboratory, M 2-4:30, and field trips. Mr. Kiersch. Alternate-year course; not offered in 1965-1966.]

533. ENGINEERING GEOLOGY

Fall term. Credit three hours. Prerequisites, Geology 322, 352; recommended, Geology 441. Lectures, M W 11. Laboratory, M 2-4:30, and field trips. Mr. Kiersch. Alternate-year course; offered in 1965-1966.

Advanced study of the physical phenomena and rock properties of special importance to the planning-design, construction, and operation of major engineering works; includes hydrogeology and other fluids, sediment, subsidence, gravity sliding, frozen-ground, natural and artificial dynamic stresses, geomechanics of rock masses, rock-soil weathering, and geologic materials of construction. Analysis of geologic problems encountered in practice and predicting the influence of natural and man-made events on engineering works.

Exploration Geology

582. EXPLORATION GEOLOGY

Spring term. Credit three hours. Recommended for all graduate students in geology. Prerequisite, graduate standing and field geology. Lectures, M W 11. Laboratory M 2-4:30. Mr. Kiersch. Alternate-year course; offered in 1965-1966.

Methods of exploration and appraisal of geologic data from both field and laboratory investigations. Assessment and presentation of direct and indirect information for professional purposes.

SEMINAR AND SPECIAL WORK

490. SENIOR THESIS

Either term. Credit one hour. Staff.

690. SPECIAL WORK

Throughout the year. Credit variable. Prerequisite, consent of the instructor. Staff.
Special or original investigations in geology on the graduate level.

SEMINAR IN GEOLOGY

Each term. No credit. For majors and required of graduate students, but open to all who are interested. T 4:45.

Reports and discussion of current research in geology and geography.

GERMAN LITERATURE

Mr. O. J. Matthijs Jolles, Acting Chairman; Messrs. E. A. Blackall, D. Connor, J. B. Dallett, P. de Man, H. Deinett, B. E. Pike, Miss Elizabeth M. Wilkinson, the Lector, and Staff.

For complete course listings and for details of the major, see the heading "German" under *Modern Foreign Languages and Literatures*.

GOVERNMENT

Mr. A. Hacker, Acting Chairman, 1965-66; Messrs. A. A. Altshuler, W. F. Berns, A. D. Bloom, H. W. Briggs, A. T. Dotson, M. Einaudi, G. Fischer, G. McT. Kahin, J. W. Lewis, S. Muller, C. Rossiter.

For a major in government the following courses must be completed: (1) Government 101, Government 104, and Government 203; (2) a minimum of twenty-four additional hours in the Department at 300 or above; (3) in related subjects, a minimum of twelve hours selected with the approval of the adviser from courses numbered 300 or above in anthropology, economics, history, philosophy, and sociology. Of the related hours, at least six must be in history. Courses in American studies, subject to the approval of the adviser, may be counted as government or history courses.

Juniors and seniors majoring in the Department who have a grade of 85 or better in one half of the hours they have passed may take supervised study in government. Consent of the instructor is required.

Candidates for the degree of Bachelor of Arts with Honors in Government will complete Government 101, 104, 203, and a minimum of twenty-eight additional hours of work in the Department, including Government 492, 493, and 494, as well as twelve hours in related subjects.

Students seeking admission to the Department's Honors program must file applications on forms obtainable from the departmental secretary by October 15 of their junior year. Applications should be submitted only by students who have a cumulative average of 85 or better in all courses completed in the Department, or who can present evidence of exceptional promise.

The Distribution I requirement in Social Sciences is satisfied in government by Government 101 and 104.

Introductory Courses

101. AMERICAN GOVERNMENT

Fall term. Credit three hours. Open to all students (with first preference for Arts and Sciences students). Lectures, T Th 2. Discussion sections, Th 3; F 10, 11, 2, 3; S 10, 11. Messrs. Berns, Hacker, Rossiter, and Staff.

A general introduction to American national government and politics.

101. AMERICAN GOVERNMENT

Spring term. Credit three hours. Primarily for non-Arts and Sciences students. Lectures, T Th 9. Discussion sections, Th 3; F 8, 12. Mr. Altshuler and Staff.

A general introduction to American national government and politics.

104. COMPARATIVE GOVERNMENT

Spring term. Credit three hours. Open to all students. Lectures, T Th 2. Discussion sections, Th 3; F 10, 11, 2, 3; S 10, 11. Messrs. Einaudi, Muller, and Staff.

A comparative study of major contemporary political movements and of governmental institutions and processes. Great Britain, France, Germany, Russia, as well as some of the newly emerging countries, will provide the materials for the discussion of key issues.

203. INTRODUCTION TO POLITICAL THEORY

Fall term. Credit three hours. Open to all students. Prerequisite, Government 101 and 104, or consent of instructor. Lectures, M W 12. Discussion sections to be arranged. Mr. Bloom.

A survey of the development of western political theory from Plato to the present. Readings from the work of the major theorists and an examination of the relevance of their ideas to contemporary politics will be stressed.

American Government and Institutions

312. URBAN POLITICS

Spring term. Credit four hours. Prerequisite, Government 101 or consent of instructor. T Th 10. Discussion sections, M 9, 10, 11.

An examination of the elements of politics in large urban centers and their suburban satellites. Analysis of relationships between governmental activities and political power, making use of systematic studies of selected problems.

313. AMERICAN CONSTITUTIONAL LAW

Fall term. Credit four hours. Open to juniors and seniors only. Prerequisite, Government 101. T Th 12 and a third hour to be arranged. Mr. Lerner.

A study of the law of the Constitution as this has been expounded by the Supreme Court. Emphasis will be placed on the various understandings of freedom that have inspired, or given rise to, that law. The course will be conducted primarily through class discussion of assigned cases.

314. POLITICS AND SOCIETY

Spring term. Credit three hours. Prerequisite, Government 101. T Th S 11. Mr. Hacker.

An analysis of the social institutions and patterns of behavior that contribute to the shaping of American political life.

[316. THE AMERICAN PRESIDENCY

Spring term. Credit three hours. No prerequisite, but Government 101 and History 315-316 are recommended preliminary courses. T Th S 10. Mr. Rossiter. Not offered in 1965-1966.]

317. THE POLITICAL PROCESS: AMERICAN POLITICAL PARTIES

Fall term. Credit three hours. Prerequisite, Government 101. American history or sociology are recommended preliminary courses. T Th 3-4:30.

An extensive examination of the literature on American parties, pressure groups, and electoral behavior. Analysis of the structure and functions of political organizations and the electoral, interest group, and policy differences between the Democratic and Republican parties at the national, state, and local levels.

318. THE POLITICAL PROCESS: THE AMERICAN CONGRESS

Spring term. Credit four hours. Open to sophomores and upperclassmen. Prerequisite, Government 101. T Th 3-4:30.

An intensive study of politics and policy formation in Congress. Special emphasis on the problems of the representative assembly in the twentieth century.

323. PUBLIC ADMINISTRATION: THE FOURTH BRANCH

Fall term. Credit three hours. Prerequisite, Government 101 or consent of instructor. M W F 10. Mr. Dotson.

An examination of the structure and functioning of the administrative branch of the American national system of government, including the Executive Office of the President, departments, regulatory commissions, government corporations, and other agencies. Particular attention will be given to the constitutional and political problems which result from the rise of administrative power.

329. THE POLITICS OF NATIONAL SECURITY

Fall term. Credit four hours. Open to sophomores and upperclassmen. Prerequisite, Government 101 or consent of instructor. M W F 2. Mr. Altschuler.

An analysis of the policy-making processes and of the domestic political issues associated with national security. National security is defined to include government activity in foreign affairs, military affairs, scientific research and development of military significance, foreign intelligence, and the domestic loyalty-security area.

330. PUBLIC CONTROL OF ECONOMIC LIFE

Spring term. Credit four hours. Open to sophomores and upperclassmen. Prerequisite, Government 101 or consent of instructor. M W F 2. Mr. Altschuler.

An analysis of the policy-making processes and of the political issues associated with government efforts to influence or directly to manage the American economy. If time permits, brief examinations of nationalization and planning in Western Europe and the Soviet Union will be undertaken for comparative purposes.

425. POLITICAL BEHAVIOR

Fall term. Credit four hours. Prerequisite, consent of instructor. T Th 9 and a third hour to be arranged. Mr. Hacker.

An examination of selected problems in political psychology and political sociology.

428. PRINCIPLES AND PROBLEMS OF AMERICAN DEMOCRACY

Spring term. Credit four hours. Open to seniors. Prerequisite, Government 355 and consent of the instructor. Hours to be arranged. Mr. Rossiter.

A critical examination of selected political and social problems currently facing the American people. Emphasis will be placed upon the extent to which possible solutions of these problems conform to the American tradition and the extent to which the tradition may have to be redefined in the light of present realities.

Comparative Government

333. GOVERNMENT AND POLITICS OF THE SOVIET UNION

Fall term. Credit four hours. Open to upperclassmen. Prerequisite, Government 104 or consent of instructor. M W F 12. Mr. Fischer.

An introduction to the Soviet political system.

336. THE POLITICAL PROCESS: POLITICAL ATTITUDES AND PARTICIPATION

Spring term. Credit four hours. Open to sophomores and upperclassmen. Prerequisite, Government 101 or 104 or consent of instructor. T Th 9 and a third hour to be arranged. Mr. Ashford.

A comparative analysis of participation and involvement in the political process at the local level in United States, and in selected European and developing countries. An analysis of attitudinal and personality factors as they relate to political life in the community.

338. POLITICS AND MODERNIZATION

Spring term. Credit four hours. Open to upperclassmen. M W F 10. Mr. Dotson.

A comparative study of political development and social change.

[341. CONSTITUTIONAL GOVERNMENT IN EUROPE

Fall term. Credit four hours. Open to upperclassmen. Prerequisite, Government 104. T Th 2-3:30. Mr. Muller. Not offered in 1965-1966.]

[343. GOVERNMENT AND POLITICS IN THE COMMONWEALTH

Fall term. Credit four hours. Prerequisite, Government 104. T Th S 9. Mr. Muller. Not offered in 1965-1966.]

344. GOVERNMENT AND POLITICS OF SOUTHEAST ASIA

Spring term. Credit four hours. Prerequisite, Government 104 and Government 377 or consent of the instructor. M F 2-3:30. Mr. Kahin.

Analysis of the organization and functioning of government and politics in the countries of Southeast Asia, with attention given to the nature of the social and economic environments which condition them.

347. CHINESE GOVERNMENT AND POLITICS

Fall term. Credit four hours. Prerequisite, Government 104. M W F 10. Mr. Lewis.

General introduction to the politics of modern China with particular emphasis on the political processes of the People's Republic of China.

Political Theory

351. DEVELOPMENT OF MODERN POLITICAL THOUGHT

Fall term. Credit four hours. Open to upperclassmen. Lectures, T Th 10. Discussion sections. Th 2, 3; F 2, 3. Miss Hannah Arendt.

The development of political thought from the sixteenth to the nineteenth century. The course is built around certain essential concepts of political theory: the nature of law, the state and sovereignty, individual rights and the community. Machiavelli, Hobbes, the Enlightenment, Rousseau, Hegel, and Marx will receive particular attention.

355. AMERICAN POLITICAL THOUGHT

Fall term. Credit four hours. Open to upperclassmen. Prerequisite, Government 101, Government 203, and History 315, or consent of the instructor. T Th S 11. Mr. Rossiter.

Survey of the development of American political thought, with emphasis on the origins and uses of ideas. Other kinds of thought—constitutional, social, religious, economic, educational, cultural—are considered in their relations to political thought.

356. AMERICAN POLITICAL THOUGHT: THE TWENTIETH CENTURY

Spring term. Credit four hours. Open to upperclassmen. Prerequisite, Government 355 or consent of instructor. T Th S 11. Mr. Robinson.

A survey of major currents of American political thought in the modern age.

462. ORIGINS OF WESTERN POLITICAL THOUGHT

Spring term. Credit four hours. Open to sophomores and upperclassmen. M W F 12. Mr. Bloom.

A survey of the classical political teachings in their development from the pre-Socratics through Greek and Roman antiquity and in their transformation by the revealed religions.

464. BASIC PROBLEMS IN POLITICAL THEORY

Fall term. Credit four hours. Open to upperclassmen with the consent of the instructor. M W F 9. Mr. Lerner.

Textual analysis of the writings of selected modern political philosophers.

International Relations

372. INTERNATIONAL RELATIONS

Spring term. Credit three hours. Open to sophomores and upperclassmen. M W F 10. Mr. Lewis.

An analysis of the basic issues, concepts, contents, and methods which characterize relations among states. Ideological, legal, military, and economic elements which may contribute to harmony and dissent will be discussed in terms of both international society and national foreign policies. The over-all frame of reference will consist chiefly of theories, practices, and institutions developed since World War II.

376. THE UNITED STATES AND THE SOVIET UNION

Spring term. Credit four hours. Open to upperclassmen. Prerequisite, Government 333. M W F 12. Mr. Fischer.

An analysis of the relations between the great powers, in the context of comparing their basic political and social institutions.

377. THE UNITED STATES AND ASIA

Fall term. Credit three hours. No prerequisites. Open to sophomores and upperclassmen. M W F 2. Mr. Kahin.

An analysis of the relations of the United States with the major states of Asia and with those smaller countries with which it is particularly concerned; attention is also given to the relationship of American policy to the Asian policies of France, Great Britain, and Soviet Russia. Deals primarily with the period since 1945.

381. INTERNATIONAL ORGANIZATION

Fall term. Credit four hours. Open to sophomores and upperclassmen. M W F 9. Mr. Briggs.

An analysis of some international governmental procedures and institutions. Particular attention will be given to the background, organization, and operation of the United Nations, with emphasis on political and legal problems.

471-472. INTERNATIONAL LAW

Throughout the year. Credit four hours a term. Open to qualified upperclassmen. M W F 11. Mr. Briggs.

A systematic study of the nature, development, and judicial application of international law. Attention will be given to the role of law in the relations of States. Cases, documentary analysis, and discussions.

[478. THE FOREIGN POLICY OF CHINA

Spring term. Credit four hours. Open to upperclassmen who have taken Government 347. M W F 8. Mr. Lewis. Not offered in 1965-1966.]

Honors Program

492. JUNIOR HONORS SEMINAR

Spring term. Credit four hours. Open only to juniors accepted as candidates for Honors in government. Hours to be arranged. Mr. Hacker.

An examination of the development and scope of the study of government, combined with training in advanced research.

493. SENIOR HONORS PROGRAM

Fall term. Credit four hours. Prerequisite, Government 492. Hours to be arranged. Mr. Hacker.

Supervised study with selected members of the Department.

494. SENIOR HONORS PROGRAM

Spring term. Credit eight hours. Prerequisite, Government 493. Hours to be arranged. Mr. Hacker.

Preparation of Honors thesis.

Supervised Study

499. READINGS

Throughout the year. Credit four hours each term. Any member of the Department.

Graduate Seminars

511. SEMINAR IN POLITICAL PARTIES AND ELECTIONS

Fall term. Credit four hours. Open to graduate students and to seniors by consent of instructor. Hours to be arranged.

516. SEMINAR IN CONSTITUTIONAL LAW AND JURISPRUDENCE

Spring term. Credit four hours. Open to graduate students and qualified seniors who have taken Government 313. Hours to be arranged. Mr. Lerner.

[518. SEMINAR IN CONTEMPORARY PROBLEMS IN CONSTITUTIONAL LAW

Spring term. Credit four hours. Open to graduate students and qualified seniors who have taken Government 313. Hours to be arranged. Mr. Berns. Not offered in 1965-1966.]

[521. SEMINAR IN PROBLEMS OF PUBLIC ADMINISTRATION

Fall term. Credit four hours. Open to graduate students and qualified seniors. Hours to be arranged. Mr. Altshuler. Not offered in 1965-66.]

523. SEMINAR IN THE POLITICS OF GOVERNMENT PLANNING

Fall term. Credit four hours. Open to graduate students and qualified seniors. Hours to be arranged. Mr. Altshuler.

525. SEMINAR IN COMPARATIVE PUBLIC ADMINISTRATION

Fall term. Credit four hours. Open to graduate students and to seniors by consent of instructor. Hours to be arranged. Mr. Dotson.

527. SEMINAR IN AMERICAN POLITICAL THOUGHT AND INSTITUTIONS

Fall term. Credit four hours. Open to graduate students and qualified seniors. Hours to be arranged. Mr. Rossiter.

528. SEMINAR IN AMERICAN POLITICAL THOUGHT AND INSTITUTIONS

Spring term. Credit four hours. Open to graduate students and qualified seniors. Hours to be arranged. Mr. Lerner.

[534. SEMINAR IN THE POLITICS OF THE SOVIET UNION

Spring term. Credit four hours. Open to graduate students and qualified seniors who have taken Government 333. Hours to be arranged. Mr. Fischer. Not offered in 1965-1966.]

536. SEMINAR IN THE ADMINISTRATIVE PROCESS

Spring term. Credit four hours. Open to graduate students and qualified seniors by consent of instructor. Hours to be arranged. Mr. Dotson.

537. SEMINAR IN POLITICAL DEVELOPMENT AND SOCIAL CHANGE

Fall term. Credit four hours. Open to graduate students and qualified seniors. Hours to be arranged. Mr. Fischer.

538. SEMINAR IN POLITICAL DEVELOPMENT AND SOCIAL CHANGE

Spring term. Credit four hours. Open to graduate students and qualified seniors. Hours to be arranged. Mr. Fischer.

[541-542. SEMINAR IN COMPARATIVE GOVERNMENT

Throughout the year. Credit four hours each term. Open to graduate students and to qualified seniors. Hours to be arranged. Mr. Einaudi. Not offered in 1965-1966.]

543-544. SEMINAR IN COMPARATIVE GOVERNMENT

Throughout the year. Credit four hours each term. Open to graduate students and to qualified seniors. Hours to be arranged. Mr. Muller.

545. SEMINAR IN CONTEMPORARY NATIONALISM

Fall term. Credit four hours. Open to graduate students and to qualified seniors. Hours to be arranged. Mr. Ashford.

547. SEMINAR IN THE POLITICS OF CHINA

Spring term. Credit four hours. Open to graduate students and to seniors who have taken Government 347 and secured the consent of the instructor. Hours to be arranged. Mr. Lewis.

[552. SEMINAR IN POLITICAL THEORY

Spring term. Credit four hours. Open to graduate students and to seniors with the consent of the instructor. Hours to be arranged. Mr. Berns. Not offered in 1965-1966.]

555-556. SEMINAR IN POLITICAL THEORY

Throughout the year. Credit four hours each term. Open to graduate students and to qualified seniors by consent of instructor. Hours to be arranged. Mr. Bloom.

[561-562. SEMINAR IN POLITICAL THEORY

Throughout the year. Credit four hours each term. Open to graduate students and to qualified seniors. Hours to be arranged. Mr. Einaudi. Not offered in 1965-1966.]

572. SEMINAR IN INTERNATIONAL RELATIONS

Fall term. Credit four hours. Open to graduate students and qualified seniors who have taken Government 372 and secured the consent of the instructor. Hours to be arranged. Mr. Lewis.

576. SEMINAR IN INTERNATIONAL LAW AND INTERNATIONAL ORGANIZATION

Spring term. Credit four hours. Open to graduate students and law students. Hours to be arranged. Mr. Briggs.

577. SEMINAR IN THE INTERNATIONAL RELATIONS OF ASIA

Fall term. Credit four hours. Open to graduate students and qualified seniors who have taken Government 377 or Government 478 and secured the consent of the instructor. Hours to be arranged. Mr. Kahin.

[583. SEMINAR IN THE FOREIGN POLICY OF CHINA

Fall term. Credit four hours. Open to graduate students and to seniors who have taken Government 478. Hours to be arranged. Mr. Lewis. Not offered in 1965-1966.]

644. SEMINAR IN POLITICAL PROBLEMS OF SOUTHEAST ASIA

Spring term. Credit four hours. Open to graduate students and qualified seniors who have taken Government 344 and secured the consent of the instructor. Hours to be arranged. Mr. Kahin.

HISTORY

Mr. F. G. Marcham, Chairman; Messrs. K. Biggerstaff, D. B. Davis, E. W. Fox, P. W. Gates, R. Graham, H. Guerlac, D. Kagan, W. F. LaFeber, C. P. Nettels, W. M. Pintner, B. Tierney, L. P. Williams, and O. W. Wolters.

For admission to the history major a student must have completed an Introduction to Western Civilization, and have earned grades of 75 or better in this and in any other history courses taken. Students who have completed only the first semester of the Introduction to Western Civilization, with a grade of 75 or better, may be provisionally admitted to the major. Prospective majors should apply for admission at the Department of History office.

In fulfillment of the major requirement a student must take twenty-eight hours of history courses numbered 300 or above. (History 215-216 may count, however, as six of these hours.) Of the twenty-eight hours, sixteen must be in courses numbered above 330, and, of these sixteen, eight must be in one particular field of history (e.g., American, ancient, Latin American, early modern European). To complete the major a student must also take two courses numbered 300 or above offered by other departments that relate to his eight-hour concentration in one particular field of history.

Candidates for the Bachelor of Arts with Honors in History will enroll in the Honors Program. Honors candidates will take the Honors Proseminar (History 399) during the fall semester of their junior year. Thereafter they may follow either one of two plans. One plan allows the student to take History 499 during the fall term of the senior year. In that course he will write an essay under the supervision of whichever member of the department he chooses. The other plan allows the student to offer in place of the essay three significant papers written in different history courses numbered 330 or above, these to be submitted by the instructor to the Honors Committee at the student's request following completion of the course. Honors candidates who take History 499 will be given a short oral examination in the field of their concentration toward the end of the senior year. Honors candidates who do not take History 499 will take a comprehensive written examination toward the end of the senior year.

The minimum requirements for admission to candidacy for Honors in-

clude (a) a cumulative average of 80 in all academic courses; (b) a cumulative average of 85 in courses in the humanities and social sciences; (c) enrollment and superior performance in at least one course in history before the spring term of the sophomore year. The criteria for the award of the degree with Honors include (a) maintenance of grades of 85 or better in all history and related courses; (b) completion of an Honors essay or three shorter papers of high quality; (c) passing the appropriate examination toward the end of the senior year.

A departmental committee, consisting of Messrs. Davis (chairman), Williams, and Graham, will supervise the Honors Program during 1965-1966. Applicants for candidacy in 1965-1966 should see the chairman of the Honors Committee prior to preregistration in the spring term of 1965. Sophomores who expect to be candidates for Honors are urged to apply for admission to the major early in their sophomore year.

The Distribution I requirement in History is satisfied by any year course in history from History 105-106 to History 323-324 inclusive.

105-106. INTRODUCTION TO WESTERN CIVILIZATION

Throughout the year. Credit three hours a term. For freshmen and sophomores; open to juniors and seniors by permission only. May not be taken for credit by students who have taken History 101-102. First term prerequisite to second except by permission. M W F 9. Mr. Williams and Assistants.

A survey of European history since antiquity. Attention is given equally to the major political and social developments and to the intellectual heritage of the West. A considerable portion of the reading is in contemporary sources.

215-216. AMERICAN HISTORY

Throughout the year. Credit three hours a term. Open to freshmen. First term prerequisite to second except by permission. T Th S 9. Mr. LaFeber.

Particular men and events in American history will be studied, within a chronological framework, with special emphasis on analyzing these men and events in the contexts of present-day problems, similar contemporary situations in other cultures, and historical methodology.

301-302. ANCIENT HISTORY

Throughout the year. Credit three hours a term. Open to sophomores. History 301 is not prerequisite to History 302. M W F 11. Mr. Kagan.

A survey of ancient history from the beginnings of civilization in the valleys of the Near East to the decline of the Roman Empire.

303-304. MEDIEVAL HISTORY

Throughout the year. Credit three hours a term. Open to sophomores. History 303 is not prerequisite to History 304. T Th S 10. Mr. Tierney.

A survey of the main trends of political, economic, intellectual, and religious development in Europe from the fourth century to the fifteenth.

307-308. ENGLISH HISTORY FROM ANGLO-SAXON TIMES TO THE PRESENT

Throughout the year. Credit three hours a term. Open to sophomores. Course 307 not prerequisite to 308. T Th S 11. Mr. Marcham.

Traces the growth of government, economic life, religion, the arts, and society among the English people. Illustrates in the history of one nation some of the principal developments of Western civilization since early modern times, such as the nation-state, the late Renaissance, the industrial revolution, the overseas empire, and state socialism. Some of the written work is designed to give elementary training in the interpretation of documentary evidence. Work for the first term ends with the civil wars of the seventeenth century.

309. INTRODUCTION TO RUSSIAN HISTORY

Fall term. Credit three hours. Open to sophomores. M W F 9. Mr. Pintner.

A survey from the earliest times until the present day. The origin and development of the autocratic state, its relationship to the major segments of the population, and the unique features of Russian culture are stressed.

310. MAJOR PROBLEMS IN RUSSIAN HISTORY

Spring term. Credit three hours. History 309 is desirable but not a prerequisite for students willing to do additional background reading. M W F 9. Mr. Pintner.

An introductory course focused on several major problems of Russian history, such as the development of serfdom, the spectacular flowering of Russian culture in the nineteenth century, the impact of industrialization, 1890-1964. The course will include written work and discussion sections as well as lectures.

311-312. SCIENCE IN WESTERN CIVILIZATION

Throughout the year. Credit three hours a term. Open to sophomores. Prerequisite, one year of college science. History 311 or consent of the instructor prerequisite to History 312. M W F 11. Mr. Williams.

A survey of the development of science in its relation to the main currents of European and American civilization from classical antiquity to the present day.

319-320. HISTORY OF LATIN AMERICA

Throughout the year. Credit three hours a term. Open to sophomores. History 319 not prerequisite to History 320. M W F 9. Mr. Graham.

A survey of political, social, economic, and intellectual developments in Latin America from the coming of the Europeans to the present day.

323. HISTORY OF CHINESE CIVILIZATION PRIOR TO THE NINETEENTH CENTURY

Fall term. Credit three hours. Open to sophomores. M W F 12. Mr. Biggerstaff.

A rapid survey of the more significant Chinese cultural developments from earliest times until the establishment of formal relations with the West.

324. HISTORY OF CHINESE CIVILIZATION: NINETEENTH AND TWENTIETH CENTURIES

Spring term. Credit three hours. History 323 not prerequisite to History 324. Open to sophomores. M W F 12. Mr. Biggerstaff.

A detailed survey of the modernization of Chinese civilization under the impact of the West. After a brief examination of early nineteenth-century China, the Western political, economic, and ideological invasion is considered, followed by a more thorough study of the revolutionary changes that have culminated in the People's Republic.

401. SUPERVISED READING

Either term. Credit two hours. Prerequisite: permission of the Chairman of the Department. Open only to seniors with grades of 80 or better in virtually all courses in the humanities and social sciences.

402. SUPERVISED RESEARCH

Either term. Credit four hours. Prerequisite: permission of the Chairman of the Department. Open only to seniors with grades of 80 or better in virtually all courses in the humanities and social sciences.

431. THE ROMAN REPUBLIC, 133-30 B.C.

Fall term. Credit four hours. Prerequisite, History 302 or consent of the instructor. M W 2-3:30. Mr. Kagan.

An intensive study of the political, economic, social, and intellectual history of Rome from the Gracchi to the end of the Republic.

432. GREEK HISTORY, 500-336 B.C.

Spring term. Credit four hours. Prerequisite, History 301 or consent of the instructor. M W 2-3:30. Mr. Kagan.

The political, economic, social, and intellectual history of the Greek world in the Classical period.

[433. THE ROMAN EMPIRE, 30 B.C.-A.D. 180]

Fall term. Credit four hours. Prerequisite, History 302 or consent of the instructor. M W 2-3:30. Mr. Kagan. Not offered in 1965-1966.]

[434. HELLENISTIC AGE]

Spring term. Credit four hours. Prerequisite, History 301-302 or consent of the instructor. M W 2-3:30. Mr. Kagan. Not offered in 1965-1966.]

[336. MEDIEVAL CULTURE, 1150-1300]

Spring term. Credit four hours. Prerequisite, History 303-304 or consent of the instructor. T Th S 12. Mr. Tierney. Not offered in 1965-1966.]

437. CHURCH AND STATE DURING THE MIDDLE AGES

Fall term. Credit four hours. Prerequisite, History 303-304 or consent of instructor. T Th S 12. Mr. Tierney.

The structure of secular and ecclesiastical government and the relations between them in the period 1000-1300.

438. FRANCE IN THE HIGH MIDDLE AGES

Spring term. Credit four hours. Prerequisite, History 303-304 or consent of the instructor. T Th S 12. Mr. Tierney.

Topics of intellectual and social history considered against the political background of the growth of the French monarchy, 1100-1250.

440. EARLY MODERN FRANCE, 1400-1660

Spring term. Credit four hours. Prerequisite, History 341-342, or consent of the instructor. T Th S 9. Mr. Sypher.

341-342. EUROPE IN THE AGE OF THE RENAISSANCE AND REFORMATION

Throughout the year. Credit four hours a term. Prerequisite, six hours in European history or consent of the instructor. T Th S 11. Mr. Sypher.

[343-344. EUROPEAN HISTORY FROM 1648 TO 1815]

Throughout the year. Credit four hours a term. Prerequisite, six hours in European history or consent of the instructor. T Th S 10. Not offered in 1965-1966.]

444. THE CENTURY OF ENLIGHTENMENT

Spring term. Credit four hours. A reading knowledge of French is required. Prerequisite, six hours in European history. M W F 10. Mr. Guerlac.

France in the eighteenth century, with special attention to the thinkers of the Age of Reason from Bayle and Fontenelle to the French Revolution.

445. SOURCES OF EIGHTEENTH-CENTURY FRENCH HISTORY

Fall term. Credit four hours. Prerequisite, a reading knowledge of French and permission of the instructor. Th 2-5. Mr. Guerlac.

Primarily for graduate students. Close reading and discussion of key sources for the social and intellectual history of the French Enlightenment.

[446. THE OLD REGIME IN FRANCE, 1660-1789]

Spring term. Credit four hours. Prerequisite, a reading knowledge of French and six hours in European history. M W F 10. Mr. Guerlac. Not offered in 1965-1966.]

[347. ENGLISH CONSTITUTIONAL HISTORY I: TO 1485]

Fall term. Credit four hours. Prerequisite, History 303-304, History 307, or consent of the instructor. T Th S 12. Mr. Tierney. Not offered in 1965-1966.]

[348. ENGLISH CONSTITUTIONAL HISTORY, II: SINCE 1485]

Spring term. Credit four hours a term. Prerequisite, History 307-308, History 347 or consent of the instructor. T Th S 9. Mr. Marcham. Not offered in 1965-1966.]

449. HISTORY OF ENGLAND UNDER THE TUDORS AND STUARTS

Spring term. Credit four hours. Prerequisite, History 307-308 or consent of the instructor. T Th S 9. Mr. Marcham.

A study of English history from 1485 to 1688 in which equal attention will be given to political, constitutional, economic, and cultural changes. Many of the principal prose works, poems, and plays of the period will be studied for the information they give concerning the life of the times.

[450. HISTORY OF ENGLAND IN THE NINETEENTH AND TWENTIETH CENTURIES]

Spring term. Credit four hours. Prerequisite, History 307-308 or consent of the instructor. T Th S 9. Mr. Marcham. Not offered in 1965-1966.]

351. EUROPE IN THE NINETEENTH CENTURY

Fall term. Credit four hours. Prerequisite, History 106 or consent of the instructor. W F 2-3:30. Mr. Copeland.

An intermediate-level course in European history from the beginning of the French

and Industrial Revolutions to 1900, stressing the influence of those two revolutions on the political and social development of European civilization. Conducted by informal lectures and discussions, it will assume some familiarity with the narrative history of the period.

352. EUROPE IN THE TWENTIETH CENTURY

Spring term. Credit four hours. Prerequisite, History 106 or 351, or consent of the instructor. M W F 11. Mr. Copeland.

An intermediate-level course in European history from 1900 to the present, stressing the efforts of European states to adjust to the rapidly evolving political, economic, and technological developments in Europe and the rest of the world. Conducted by lectures and discussions.

551. EVOLUTION OF THE FRENCH REPUBLIC

Spring term. Credit four hours. Open to upperclassmen and graduate students with the consent of the instructor. A reading knowledge of French is required. W 2-4:30. Mr. Copeland.

A critical survey of the politics of the Second, Third, Fourth, and Fifth Republics. There will be a consideration of different interpretations of such developments as Boulangism, the Popular Front, the Resistance, and Gaullism.

[553. THE EUROPEAN REVOLUTION, 1789-1848

Fall term. Credit four hours. Open to seniors and graduate students with the consent of the instructor. A reading knowledge of French is required. W F 11-12:30. Mr. Fox. Not offered in 1965-1966.]

[554. THE MODERNIZATION OF EUROPE

Spring term. Credit four hours. Open to seniors and graduate students with the consent of the instructor. Mr. Fox. Not offered in 1965-1966.]

356. HISTORY OF MODERN GERMANY

Spring term. Credit four hours. Prerequisite, six hours in European history. T Th S 10.

461. ECONOMIC AND SOCIAL HISTORY OF RUSSIA

Fall term. Credit four hours. Prerequisite, History 309-310, or permission of the instructor. M 2-3, W 2-4. Mr. PINTNER.

Emphasizes the role of the peasantry throughout the entire course of Russian history, from the Kievan period to the present day. Special attention will be devoted to the various methods used by the state in the economic exploitation and political control of the population.

462. HISTORY OF RUSSIAN FOREIGN RELATIONS FROM THE FIFTEENTH CENTURY

Spring term. Credit four hours. Prerequisite, History 309-310 or permission of the instructor. M 2-3, W 2-4. Mr. Pintner.

Deals with the nature of Russia's relationships with other powers, particularly with the question of to what extent these relationships have changed in the past 500 years.

466. ORIGINS OF MODERN SCIENCE

Spring term. Credit four hours. Prerequisite, History 311-312 or consent of the instructor. Th 2-5. Mr. Guerlac.

Reading and discussion of scientific classics important for understanding the Scientific Revolution of the seventeenth century from Galileo to Newton.

[367-368. SCIENCE AND THE MODERN WORLD

Throughout the year. Credit four hours a term. Prerequisite, History 101-102 or 105-106 plus fulfillment of the science requirement, or History 311-312. M W F 2. Mr. Williams. Not offered in 1965-1966.]

[369-370. SCIENCE SINCE 1850

Throughout the year. Credit four hours a term. Prerequisite, either an intense interest in the history of modern science (see the instructor) or two years of college science. Course 369 is not prerequisite to 370. M W F 9. Mr. Williams. Not offered in 1965-1966.]

473. AMERICAN COLONIAL HISTORY TO 1763

Fall term. Credit four hours. M W F 2. Mr. Nettels.

474. THE AGE OF WASHINGTON, 1763-1800

Spring term. Credit four hours. M W F 2. Mr. Nettels.

The struggle for American independence, the making of the Constitution, the founding of the federal government, and the shaping of national policies.

[475. AMERICAN HISTORY FROM 1877 TO 1912

Fall term. Credit four hours. No prerequisite, but History 316 and Government 101 are strongly recommended as preliminaries. T Th S 9. Mr. LaFeber. Not offered in 1965-1966.]

376-377-378. AMERICAN CULTURAL AND INTELLECTUAL HISTORY

Credit four hours a term. The three terms form a sequence but each may be taken independently and without prerequisite. History 376-377 will not be offered in 1965-66. History 378, spring term. M W F 10. Mr. Davis.

The subject of this course is the interplay between historical change in America and basic beliefs and values, particularly those concerning God and man, individual liberty and the good society, the meaning of the historical past and future. The most reflective and articulate thinkers will receive more attention than public opinion in a general sense. Topics will include Puritanism and sectarianism, rationalism and philanthropic movements in the eighteenth century, the Jeffersonian synthesis, romanticism in politics and culture of the nineteenth century, the impact of evolutionary thought, ferment and reorientation in philosophy and social theory, naturalism, amorism, and erosion of the liberal faith, and the continuing search for a new synthesis. The first term is not prerequisite for the second.

History 376 covers the period to 1820; History 377 covers the period 1820-1890; History 378 covers the period 1890 to the present.

478. THE AMERICAN REFORM IMPULSE, 1800-1860

Spring term. Credit four hours. Open to upperclassmen and graduate students. M W F 3. Mr. Davis.

Major emphasis will fall on abolitionism, women's rights, temperance, and prison reform. Specific reform movements will be related to changes in religion and social

philosophy. Some attempt will be made to show the relevance of ante-bellum reforms to later reform movements of farmers and laborers, progressives, New Dealers, and antisegregationists. Research paper and considerable reading in primary sources.

SEMINAR IN AMERICAN STUDIES

Fall term, Mr. Davis. Spring term, Mr. Elias. (See American Studies 401-402).

[379-380. RECENT AMERICAN HISTORY

Throughout the year. Credit four hours a term. T Th S 12. Not offered in 1965-66.]

481-482. AMERICAN HISTORY: HISTORY OF THE WEST

Throughout the year. Credit four hours a term. The first term is not prerequisite to the second. M W F 12. Mr. Gates.

Western migration, Indian policies, internal improvements, transportation, agriculture, growth of democracy and nationalism, land problems, conservation, federal and state relations. The major part of the work will be a research paper.

383-384. HISTORY OF AMERICAN FOREIGN RELATIONS

Throughout the year. Credit four hours a term. T Th S 11. Mr. LaFeber.

A survey of American foreign policy, 1750 to the present. Special emphasis is placed on the domestic, economic, political, and social changes and how these changes influence the formulation of American foreign policy. The first semester covers the period to 1898. A term paper is optional for all students who receive a 75 or above on the six weeks' examination.

[486. MOTIVATIONS OF AMERICAN FOREIGN POLICY

Spring term. Credit four hours. Prerequisite, consent of the instructor. Th 2-5. Mr. LaFeber. Not offered in 1965-1966.]

487. MEXICO IN THE TWENTIETH CENTURY

Fall term. Credit four hours. Prerequisite, History 319-320 or consent of the instructor. M W F 11. Mr. Graham.

A study of the Mexican Revolution of 1910-1920 and the working out of its political, social, economic, and intellectual implications up to the present time.

488. BRAZIL SINCE INDEPENDENCE

Spring term. Credit four hours. Prerequisite, History 319-320 or consent of the instructor. M W F 11. Mr. Graham.

The political, economic, and social history of Brazil since 1808 with special attention to particular problems requiring critical examination in the light of alternative interpretations. Requirements include active participation in discussions as well as oral reports based on term papers.

491-492. MODERNIZATION OF CHINA

Throughout the year. Credit four hours a term. Prerequisite, History 324 with grade of 85 or better or permission of the instructor; 491 prerequisite to 492. Conducted as a seminar. M 4-6. Mr. Biggerstaff.

Topical study of the impact of Western civilization upon traditional China and of the changes in China during the first half of the twentieth century.

495. SOUTHEAST ASIAN HISTORY TO THE FOURTEENTH CENTURY

Fall term. Credit four hours. T Th S 11. Mr. Wolters.

496. SOUTHEAST ASIAN HISTORY FROM THE FIFTEENTH CENTURY

Spring term. Credit four hours. Prerequisite, History 495 or consent of the instructor. T Th S 11. Mr. Wolters.

Honors Program

399. HONORS PROSEMINAR

Fall term. Credit two hours. Open only to juniors who have been accepted by the Department as candidates for Honors in history. W 4-6. Mr. Davis.

Training and practice in the use of historical materials and in historical writing; discussion of various methods of research and various types of historical explanation. Considerable time will be devoted to the systematic composition of a term paper.

499. HONORS GUIDANCE

Fall term. Credit four hours. Prerequisite, History 399.

Devoted to the writing of an Honors essay under the guidance of a member of the department.

Graduate Seminars

501. INTRODUCTION TO HISTORICAL THEORY AND PRACTICE

Fall term. Credit four hours. Required of all entering graduate students in history (exemption may be granted by the instructor to students who have already completed a satisfactory equivalent). Not open to undergraduates. T Th 2-4.

Problems of historical thought, research, and writing as illustrated by historians representative of various cultures, periods and schools. Intensive supervision in the preparation of a term paper.

511-512. SUPERVISED READING

Throughout the year. Credit four hours a term. Hours to be arranged. For graduate students only. Staff.

631-632. SEMINAR IN ANCIENT HISTORY

One or two terms. Credit four hours a term. Hours to be arranged. Mr. Kagan.

637-638. SEMINAR IN MEDIEVAL HISTORY

One or two terms. Credit four hours a term. Hours to be arranged. Mr. Tierney.

641-642. SEMINAR IN EUROPEAN HISTORY DURING THE ERA OF THE RENAISSANCE AND REFORMATION

One or two terms. Credit four hours a term. Hours to be arranged. Mr. Sypher.

647-648. SEMINAR IN TUDOR AND STUART HISTORY

One or two terms. Credit four hours. Hours to be arranged. Mr. Marcham.

[651-652. SEMINAR IN MODERN EUROPEAN HISTORY

One or two terms. Credit four hours a term. Hours to be arranged. Mr. Fox. Not offered in 1965-1966.]

657-658. SEMINAR IN MODERN EUROPEAN HISTORY

One or two terms. Credit four hours. Th 4-6.

661-662. SEMINAR IN RUSSIAN HISTORY

One or two terms. Credit four hours a term. Hours to be arranged. Mr. Pintner.

665-666. SEMINAR IN THE HISTORY OF EARLY MODERN SCIENCE

One or two terms. Credit four hours a term. Hours to be arranged. Mr. Guerlac.

667-668. SEMINAR IN THE HISTORY OF SCIENCE DURING THE
NINETEENTH AND TWENTIETH CENTURIES

One or two terms. Credit four hours a term. Hours to be arranged. Mr. Williams.

671-672. SEMINAR IN EARLY AMERICAN HISTORY

One or two terms. Credit four hours a term. Hours to be arranged. Mr. Nettels.

675-676. SEMINAR IN AMERICAN CULTURAL AND INTELLECTUAL
HISTORY

One or two terms. Credit four hours a term. Hours to be arranged. Mr. Davis.

679-680. SEMINAR IN THE HISTORY OF THE AMERICAN WEST

One or two terms. Credit four hours a term. Hours to be arranged. Mr. Gates.

683. SEMINAR IN THE HISTORY OF AMERICAN FOREIGN
RELATIONS

Fall term. Credit four hours. Hours to be arranged. Mr. LaFeber.

687-688. SEMINAR IN LATIN AMERICAN HISTORY

One or two terms. Credit four hours a term. Hours to be arranged. Mr. Graham.

691-692. SEMINAR IN MODERN CHINESE HISTORY

One or two terms. Credit four hours a term. Hours to be arranged. Mr. Biggerstaff.

695-696. SEMINAR IN SOUTHEAST ASIAN HISTORY

One or two terms. Credit four hours a term. Hours to be arranged. Mr. Wolters.

HISTORY OF ART

Mr. A. S. Roe, Chairman; Mrs. A. L. Benson, Messrs. W. I. Homer, S. J. O'Connor, N. A. Patillo, Jr., J. H. Turnure, F. O. Waage, M. W. Young.

MAJOR REQUIREMENTS

Students who wish to do their major work in the history of art should plan to have completed any two courses in the Department by the end of their sophomore year. Students who have taken only one course may also petition to major in the Department if that course is at the 200 level or above and is completed with a grade of 75 or better. Students should also have completed the Distribution I requirements, preferably meeting the requirement in history with one of the following year courses in European history: 105-106, 301-302, or 303-304.

In their upperclass years, majors shall fulfill the following requirements: at least thirty-two *additional* hours of courses in the history of art at the 300 or 400 level and another eight hours at the 300 or 400 level, which may be further departmental offerings, or in some related area approved by the student's major adviser.

A candidate for the degree of Bachelor of Arts with Honors in the history of art should apply at the departmental office not later than the first week of classes of the junior year. In order to be eligible for the Honors program, the candidate must have a cumulative average of 80 for all courses in the underclass years and of 85 for courses in the Department of the History of Art (which will include at least two courses at the 300 level). In the upperclass years, the candidate will be expected to take such courses in the 301-304 cycle as he may not already have offered and to include 491-492 and 493-494 among the regular requirements. There will be a comprehensive examination at the end of the senior year. Further information in regard to the Honors program may be obtained at the department office.

The Distribution I requirement in Expressive Arts is satisfied in the history of art by courses 103-104, 201-202, 201-204, or by a combination of 103 with any course at the 200 or 300 level.

103. INTRODUCTION TO THE ANALYSIS OF WORKS OF ART

Either term. Credit three hours. Fall term, M W F 9, 10, 11, 12; T Th S 9, 10. Spring term, M W F 10, T Th S 9. Mr. Young, Mr. O'Connor, Mrs. Benson.

An introduction to the problems of experiencing works of art. Students will meet in small groups of from fifteen to twenty for discussion and examination of works of art, largely through reproductions, in order to provide training in the techniques of visual analysis. A large part of the course will be devoted to the problems of articulation of the visual experience. Conceived as a preparation for the study of art history, the course itself will not, however, approach works of art in the usual historical context. This course may be considered as a useful preparation for the study of art history, or it may also be regarded as a course of general interest with applications outside the field. No previous experience in the fine arts is required. Short papers will be assigned. Open only to freshmen and sophomores in the fall term; preference will be given to underclassmen in the spring, but upperclassmen will be admitted up to the limit of section size if places are available.

104. INTRODUCTION TO THE ANALYSIS OF WORKS OF ART

Spring term. Prerequisite, History of Art 103. Credit three hours. M W F 11. Mrs. Benson.

An introduction to the problems of theory and criticism in the visual arts. Designed as a continuation of History of Art 103; students will meet in discussion groups to consider specific examples of the several varieties of visual arts and the writings of major critics and historians, with the aim of understanding some of the possible critical approaches and acquiring skill in the use of those techniques. Short papers and readings will be assigned.

201-202. INTRODUCTION TO ART

Throughout the year. Credit three hours a term. History of Art 201 is prerequisite to History of Art 202. M W F 12, Mr. Turnure. T Th S 11, instructor to be announced.

Intended to foster an understanding of a wide range of material by concentrating on selected examples of painting, sculpture, and architecture of the highest quality. The lectures will follow a generally chronological pattern. The fall term will begin with man's early artistic efforts and will continue into the Renaissance. The emergence of the modern point of view from the Renaissance to the present will be discussed in the spring term. Open to freshmen and sophomores; also to upperclass students as an elective.

204. INTRODUCTION TO PAINTING AND SCULPTURE

Spring term. Credit three hours. Open to sophomores and upperclass students, except those who have had History of Art 202. T Th S 11. Preliminary examinations will be held at 7 p.m. on March 3 and April 14, 1966. Mr. Pattillo.

A survey of western European art beginning with the fourteenth century and dealing chiefly with painting.

281. INTRODUCTION TO ASIAN ART

Fall term. Credit three hours. M W F 10. Mr. O'Connor.

A consideration of the major artistic achievements of India, Southeast Asia, China, and Japan, with particular reference to the aesthetic and religious principles underlying the development of the art of these countries. Attention will be focussed on selected masterpieces of painting, sculpture, and architecture in order to exemplify the main stylistic and cultural trends of the most important periods.

[301. ART OF THE ANCIENT WORLD

Fall term. Credit three hours. M W F 9. Mr. Waage. Not offered in 1965-1966.]

[302. ART OF THE MIDDLE AGES

Spring term. Credit three hours. M W F 9. Mr. Turnure. Not offered in 1965-1966.]

303. ART OF THE EARLY AND HIGH RENAISSANCE

Fall term. Credit three hours. M W F 9. Mr. Roe.

Painting, sculpture, and architecture in Europe in the fifteenth and sixteenth centuries.

304. ART OF THE SEVENTEENTH AND EIGHTEENTH CENTURIES

Spring term. Credit three hours. M W F 9. Mr. Roe.

The modifications of Renaissance styles in architecture, sculpture, and painting in Italy and their diffusion to the countries of western and northern Europe.

The group of courses described above is intended to present in some detail the major trends and monuments in the artistic development of Western culture during four basic periods leading up to the present. Taken as a sequence they will form a foundation in depth for more advanced work in specific areas. They may, however, be taken individually and as such are intended to be appropriate electives for students pursuing curricula in related areas of literature, languages, history, etc.

305-306. INTRODUCTION TO ARCHITECTURE

Throughout the year. Credit four hours a term. T Th S 9. Mr. Pattillo.

A survey of the architecture of the Western world from ancient times to the present. The first term ends with the Romanesque period; the second begins with the Gothic.

[313. PREHISTORIC ART

Fall term. Credit four hours. M W F 12. Mr. Waage. Not offered in 1965-1966.]

314. PRIMITIVE ART: THE ART OF TRIBAL SOCIETIES

Spring term. Credit four hours. M W F 12. Mr. Waage.

The shaping and use of art forms to satisfy group needs in cultures where art was an indispensable element of everyday life. The lectures will cover the tribal arts of Africa; subjects for the term paper will involve also the primitive arts of Australia, the Pacific Islands, and North America.

321. GREEK SCULPTURE

Spring term. Credit four hours. M W F 10. Mr. Waage.

A study of the sculpture of the first culture whose artistic forms developed beyond those of the archaic stage; the causes of this advance and the factors which conditioned it. Both the Hellenic and the Hellenistic periods are covered.

(This course will normally be offered in the fall term; in 1965-1966 only, it will be offered in the spring term.)

[322. ART OF THE ROMAN EMPIRE

Spring term. Credit four hours. M W F 10. Mr. Waage. Not offered in 1965-1966.]

342. THE ART OF THE NORTHERN RENAISSANCE

Spring term. Credit four hours. T Th S 10. Mr. Turnure.

A general investigation of the development of realism in Flanders and Germany from its beginnings in the Middle Ages to the seventeenth century. Special attention will be given to major artists such as Jan van Eyck and Albrecht Dürer.

[343. FLORENTINE AND CENTRAL ITALIAN PAINTING

Fall term. Credit four hours. T Th S 11. Mr. Pattillo. Not offered in 1965-1966.]

345. VENETIAN AND NORTH ITALIAN PAINTING

Fall term. Credit four hours. T Th S 11. Mr. Pattillo.

Beginning with the early years of the fifteenth century and ending in the latter part of the sixteenth with the works of Tintoretto and Veronese.

[347. ITALIAN RENAISSANCE ARCHITECTURE

Spring term. Credit four hours. M W F 12. Not offered in 1965-1966.]

[348. HIGH RENAISSANCE AND MANNERISM

Fall term. Credit four hours. M W F 10. Not offered in 1965-1966.]

354. SEVENTEENTH-CENTURY PAINTING

Fall term. Credit four hours. T Th S 10. Mr. Turnure.

A study of the major European schools and masters of the century of the Baroque.

362. EUROPEAN PAINTING OF THE NINETEENTH CENTURY

Fall term. Credit four hours. M W F 12. Mr. Roe.

A study of major trends in European painting from Goya to Cézanne. Emphasis will be upon French painting from the era of the French Revolution to the Post-Impressionists, but significant developments and major artistic personalities in other European countries will also be considered.

363. MODERN FRENCH PAINTING

Spring term. Credit four hours. M W F 12. Mr. Homer.

Major tendencies in modern French painting from Cézanne to the present. The lectures will cover such key figures as Cézanne, Picasso, and Matisse in detail. The emphasis will be placed on significant new attitudes toward form and content which influence painters in other countries, as well as the other arts.

[375. AMERICAN ART OF THE COLONIES AND EARLY REPUBLIC

Fall term. Credit four hours. T Th S 10. Mr. Roe. Not offered in 1965-1966.]

376. AMERICAN ART FROM THE CIVIL WAR TO THE PRESENT

Fall term. Credit four hours. T Th S 10. Mr. Homer.

A study of painting, sculpture, and architecture in the United States from about 1860 to the present. The material will be treated in relation to main currents in American thought and with regard to developments in European art.

383. ART OF CHINA

Fall term. Credit four hours. M W F 11. Mr. Young.

A survey of painting and sculpture from earliest times to the present, with some consideration of ceramics and the minor arts. The role of Buddhism, Taoism, and Confucianism in determining the aesthetic expression of China will also be discussed.

384. THE ART OF JAPAN

Spring term. Credit four hours. M W F 11. Mr. Young.

A survey of painting, sculpture, and architecture from earliest times to the modern era. Attention will be paid to the development of the various forms of folk art, wood-block prints, and the decorative tradition.

[386. ARTS OF INDIA AND SOUTHEAST ASIA

Spring term. Credit four hours. M W F 11. Mr. O'Connor. Not offered in 1965-1966.]

394. ORIGINAL WORKS OF ART

Spring term. For majors and other advanced students. Prerequisites, History of Art 201-202 or equivalents, eight hours of advanced courses in Art History, consent of the instructor. Limited to twelve students. F 2-4:30. Mr. Young.

A non-chronological course which will meet in the White Art Museum, dealing with original objects in all the arts. Paintings, drawings, prints, sculpture, and the minor arts will be considered. Lectures, discussions, reports.

[397. RENAISSANCE, BAROQUE, AND MODERN SCULPTURE

Fall term. Credit four hours. M W F 11. Not offered in 1965-1966.]

Courses at Advanced Level

The following offerings are intended primarily for majors and graduate students; however, they will be available as upperclass electives to interested students who have satisfactorily completed at least one appropriate course at the 300 level. These courses will meet once a week and will require the presentation of reports and papers by all participants.

[425. EGYPTIAN ART AND ARCHAEOLOGY

Fall term. Credit four hours. Prerequisite, consent of the instructor. F 2-4:30. Mr. Turnure. Not offered in 1965-1966.]

[428. PROBLEMS IN ANCIENT ART AND ARCHAEOLOGY

Spring term. Credit four hours. Prerequisite, consent of the instructor. T 2-4:30. Mr. Waage. Not offered in 1965-1966.]

435. GOTHIC ARCHITECTURE

Fall term. Credit four hours. Prerequisites, History of Art 305-306 and consent of the instructor. W 2-4:30. Mr. Pattillo.

[446. LITERARY SOURCES IN THE ITALIAN RENAISSANCE

Spring term. Credit four hours. Prerequisite, consent of the instructor. M 2-4:30. Not offered in 1965-1966.]

448. PROBLEMS IN SIXTEENTH-CENTURY ART

Spring term. Credit four hours. Prerequisite, consent of the instructor. W 2-4:30. Mr. Roc.

Major monuments and trends of the century of transition from the High Renaissance to the Baroque. The center of attention will be Italy, but other countries will also be included.

454. STUDIES IN SEVENTEENTH-CENTURY ART

Spring term. Credit four hours. Prerequisites, History of Art 202 or the equivalent, and consent of the instructor. Th 2-4:30. Mr. Turnure.

An investigation of significant aspects of the visual arts in Italy and Spain from the later sixteenth century until about 1700.

[461. PROBLEMS IN NINETEENTH-CENTURY ART

Fall term. Credit four hours. Prerequisites, History of Art 362 or 363 and consent of the instructor. Th 2-4:30. Not offered in 1965-1966.]

463. PROBLEMS IN TWENTIETH-CENTURY ART

Fall term. Credit four hours. Prerequisites, History of Art 362 or 363 and consent of the instructor. Open to students who have had 464. W 2-4:30. Mr. Homer.

464. PROBLEMS IN TWENTIETH-CENTURY ART

Spring term. Credit four hours. Prerequisites, History of Art 362 or 363 and consent of the instructor. Open to students who have had 463. T 2-4:30. Mr. Homer.

[472. PROBLEMS IN AMERICAN ART

Spring term. Credit four hours. Prerequisites, History of Art 375 and consent of the instructor. W 2-4:30. Mr. Roe. Not offered in 1965-1966.]

[483. METHODS OF RESEARCH IN ASIAN ART

Fall term. Credit four hours. Prerequisite, consent of the instructor. T 2-4:30. Mr. Young. Not offered in 1965-1966.]

[484. PROBLEMS IN ASIAN ART

Spring term. Credit four hours. Prerequisite, History of Art 383 or consent of the instructor. T 2-4:30. Mr. Young. Not offered in 1965-1966.]

[485. CHINESE PAINTING: THE FIRST MILLENIUM

Fall term. Credit four hours. Prerequisite, History of Art 383 or consent of the instructor. T 2-4:30. Mr. Young. Not offered in 1965-1966.]

[486. CHINESE PAINTING: THE LATER CENTURIES

Spring term. Credit four hours. Prerequisite, History of Art 383 or History of Art 485, or the consent of the instructor. T 2-4:30. Mr. Young. Not offered in 1965-1966.]

488. SOUTHEAST ASIAN ART AND ARCHAEOLOGY

Spring term. Credit four hours. Prerequisite, consent of the instructor. F 2-4:30. Mr. O'Connor.

Studies of selected monuments and art traditions of Southeast Asia.

[495. ENGLISH ART

Spring term. Credit four hours. Prerequisite, consent of the instructor. M 2-4:30. Mr. Roe. Not offered in 1965-66.]

Archaeology

Students who are interested in archaeology are directed to History of Art 201 and 301, and especially to 313, 314, 321, 322, 425, 428, and 488, all of which include archaeological material. The following specialized courses treat specific excavational material and procedures, and are therefore open

only to a limited number of students who have some background in ancient history, ancient languages, anthropology, or art history. (See also listings under Anthropology.)

[421. NUMISMATICS

Fall term. Credit four hours. Prerequisite, consent of the instructor. T 2-4:30. Mr. Waage. Offered in 1966-1967 and alternate years.]

[423. CERAMICS AND THE TECHNIQUES OF EXCAVATION

Fall term. Credit four hours. Prerequisite, consent of the instructor. T 2-4:30. Mr. Waage. Offered in 1967-1968 and alternate years.]

Honors

491-492. HONORS WORK (JUNIORS)

Throughout the year. Credit four hours a term. Prerequisite, provisional acceptance as a candidate for Honors. Hours to be arranged.

Independent work; preparation of papers.

493-494. HONORS WORK (SENIORS)

Throughout the year. Credit four hours a term. Prerequisite, History of Art 492. Hours to be arranged.

Preparation of a senior thesis.

Graduate Study

591-592. GRADUATE STUDY

Throughout the year. Credit four or more hours a term. Open only to graduate students.

MATHEMATICS

Mr. P. Olum, Chairman; Messrs. R. P. Agnew, J. B. Ax, I. Berstein, J. Chaiken, S. U. Chase, C. J. Earle, J. Eells, Jr., W. Faris, R. H. Farrell, W. H. J. Fuchs, H. H. Gershenson, R. Greenblatt, L. Gross, C. S. Herz, P. J. Hilton, P. J. Kahn, H. Kesten, J. Kiefer, S. Kochen, G. R. Livesay, A. Nerode, L. E. Payne, G. S. Rinehart, J. B. Robertson, A. Rosenberg, G. E. Sacks, F. Spitzer, C. J. Stone, S. Wainger, R. J. Walker, R. W. West, H. Widom, J. A. Williamson, J. Wolfowitz.

At all times a student at Cornell is urged to take the most advanced mathematics course for which he is prepared. Members of the Department are always available to discuss with students the appropriate courses for their levels of ability and interest, and students are urged to avail themselves of this help. However, a great deal of time may be saved by a careful reading of the following remarks.

BASIC SEQUENCES

There are two sequences in elementary calculus. They have 111 in common. The upper sequence continues with 122-221-222 while the standard one continues with 112-213. Students who desire more mathematics should take the upper sequence, which is prerequisite for most of the advanced courses. The standard sequence is designed for students whose programs do not permit more than three semesters of mathematics and for those who find the upper sequence too demanding. A student whose performance in 112 has been exceptional can (with the consent of his instructor) be admitted into 221. A student in the 111-213 sequence who wants the linear algebra material of 221 may obtain it at an appropriate level by taking 331. There are other special purpose calculus sequences, namely 191-192-293-294, primarily for engineers, and 201-202, which is intended for social scientists and is available only to upperclassmen.

Entering students who have received a grade of 4 or 5 on the College Entrance Board Advanced Placement Examination will receive at least one semester of advanced standing and credit. These students and all others desiring advanced standing and credit must also take the placement examination administered by the Department during orientation week (see page 8). Credit for one or two semesters may be awarded. A well prepared student who distinguishes himself on the Department's placement examination will be placed in 221 and may complete the upper sequence in the freshman year. In exceptional circumstances it is also possible to take 122 and 221 concurrently. Thus a student who has a very firm grounding in only the material of 111 may still be able to complete the upper sequence in one year. Such opportunities should be considered especially by students intending to major in mathematics or allied fields.

MAJOR OPTIONS

There are three options available for students intending to major in mathematics; the respective minimum requirements are listed below. In each case, a student will be accepted as a major by the Department only if he can reasonably be expected to have satisfied the prerequisite to his option by the end of the term in which he applies for admission to the major. This acceptance is contingent upon actual fulfillment of the prerequisites.

Option I. (This includes all prospective Honors candidates and all students who contemplate an eventual Ph.D. in mathematics.) Prerequisite: 221-222. Requirements: (a) 411-412, (b) 431-432, (c) at least 12 additional hours of mathematics courses numbered 300 or above, other than 313, 315, 316, 370.

The Department strongly recommends that all prospective Option I majors take Physics 207-208 in their freshman year.

Option II. (This includes those mainly interested in the application of mathematics who do not contemplate an eventual Ph.D. in mathematics. It will not prepare a student for work at the Ph.D. level in the theoretical side of even such applied areas as statistics, numerical analysis, etc.) Prerequisites: (a) 221-222, (b) Physics 207-208. Requirements: (a) 421, 422, (b) 431, 332

or 432, (c) an approved 8-hour sequence in statistics, numerical analysis, or advanced differential equations, (d) at least 8 additional hours of courses numbered 300 or above in mathematics or a physical science not including Mathematics 313, 315, 316, 370.

Option III. (For prospective secondary school teachers and others who wish to major in mathematics but do not intend to become professional mathematicians, e.g. premedical and prelaw students. This option does not prepare for graduate work in mathematics.) Prerequisites: (a) 222 or (a') 213 and 200, both at a high level of performance, (b) Physics 101-102, or 201-202, or 207-208. Mathematics requirements: (a) 311-312, (b) 331 if 221 has not been taken, 332, (c) 451-452 and either (d) four additional hours of Mathematics courses numbered above 300 plus nine hours of Education courses (Mathematics 370 is recommended but not required) or (d') eight additional hours of Mathematics courses numbered above 300. (Students planning to teach in secondary schools should make themselves familiar with State requirements. Students wishing to do student teaching must apply for this in Room 102 Stone Hall by the end of their first term as juniors.)

The requirements for Honors in mathematics are: (i) satisfaction of the requirements of Option I at a high level of performance, (ii) satisfactory performance in the Honors Seminar 401, (iii) satisfactory performance on the graduate qualifying examination. (This requires a knowledge of the material of 421, 422.)

Students wishing to take any of the courses numbered 300 or above are invited to confer, before registering, with the instructor concerned.

Some one-year sequences change level from one term to the next, e.g. 325-426 and 371-472. Subject matter is indicated by the second digit thus: 0 general; 1,2 analysis; 3,4 algebra; 5,6 geometry; 7 probability and statistics; 8 logic; 9 other.

The Distribution I requirement in mathematics is satisfied with any six hours in mathematics.

General

101-102. SELECTED TOPICS IN MATHEMATICS

Throughout the year. Credit three hours a term. First term prerequisite to second. T Th S 12. Mr. Livesay.

A lecture course intended for students who do not plan to take many courses in mathematics, but who nevertheless wish to learn some of the principal ideas of the subject. This is not a review course to improve faulty preparation in elementary mathematics. Even though it presupposes only a modest preparation, the course treats a number of topics in genuine mathematics, stressing ideas and theory rather than mere manipulation. It is not a preparation for any other course although sometimes a student with a high grade may be admitted to a calculus course.

200. BASIC CONCEPTS OF MATHEMATICS

Spring term. Credit three hours. Prerequisite, 213 or, with consent of the instructor, 112. T Th S 9. Mr. West.

Primarily for prospective teachers and other undergraduates with a cultural interest in mathematics. Set theory, logic, axiom systems, the real number field, other simple algebraic structures, cardinal numbers.

401. HONORS SEMINAR

Fall term. Credit four hours. Prerequisite, provisional acceptance as a candidate for Honors. Hours to be arranged.

Students will discuss selected topics under the guidance of one or more members of the staff. This seminar is required for Honors in mathematics.

502. GRADUATE PROSEMINAR

Spring term. Credit four hours. Prerequisite, candidacy for an advanced degree with a major in mathematics. M W F 4. Mr. Berstein.

Presentation by students of material in mathematical literature. Required of all graduate students majoring in mathematics.

Calculus

111. CALCULUS

Either term. Credit three hours. Fall term: lectures, M W F 11, 12; T Th S 11, 12 plus one hour to be arranged. Spring term: M W F 8, 9, 10; T Th S 8, 11, 12. Preliminary examinations will be held at 7 p.m. Oct. 25, Nov. 29, Jan. 10. Fall term, Messrs. Kesten and Rosenberg.

Plane analytic geometry, differentiation and integration of algebraic and trigonometric functions, applications. In the fall term, the third lecture each week will be of a special character, devoted to a more rigorous approach to the calculus.

112. CALCULUS

Either term. Credit three hours. Prerequisite, 111. Fall term: M W F 9, 10; T Th S 9, 10. Spring term: lectures M W 11, 12; T Th 12 plus one hour to be arranged. Preliminary examinations will be held at 7 p.m. on Mar. 14, Apr. 18, May 16. Spring term, Messrs. Greenblatt and Rinchart.

Differentiation and integration of elementary transcendental functions, the technique of integration, conic sections, polar coordinates, infinite series.

213. CALCULUS

Either term. Credit three hours. Prerequisite, 112. Fall term: lectures, T Th 10 plus one hour to be arranged. Spring term: M W F 8, 10. Preliminary examinations will be held at 7 p.m. on Oct. 25, Nov. 29, Jan. 10. Fall term, Mr. Williamson.

Solid analytic geometry and vectors, partial differentiation, multiple integrals, differential equations.

122. CALCULUS

Either term. Credit three hours. Prerequisite, recommendation of the 111 lecturer. (This will be based on satisfactory performance in the rigorous material of the special weekly lecture of 111 described above, or on exceptional performance in regular course work in 111.) For fall term, admission by consent of the Department. Fall term: M W F 11, T Th S 9. Spring term: M W F 10, 11; T Th S 9, 10.

Covers content of 112 in more detail.

221. CALCULUS

Either term. Credit four hours. Prerequisite, grade of 80 or better in 122 or (with consent of instructor) exceptional performance in 112. Fall term: M W F 8, 10; T Th S 8, 10. Spring term: M W F 11; T Th S 9.

Linear algebra and differential equations. Topics include vector algebra, linear transformations, matrices, linear differential equations, and systems of linear differential equations with constant coefficients.

222. CALCULUS

Either term. Credit four hours. Prerequisite, 221. Fall term: M W F 10. Spring term: M W F 8, 10; T Th S 10.

Vector differential calculus, calculus of functions of several variables, multiple integrals.

221H-222H. CALCULUS

Honors section of 221-222. Throughout the year. Credit two hours a term. Prerequisite, consent of the instructor. Open only to students simultaneously registered in 411-412. Hours to be arranged. Mr. Eells.

191. CALCULUS FOR ENGINEERS

Either term. Credit four hours. Fall term: lectures, M W F 9, 11 plus recitation periods to be arranged. Spring term: M W F S 9, 11. Preliminary examinations will be held at 7 p.m. on Oct. 20, Nov. 10, Dec. 8, Jan. 12. Fall term, Messrs. Kiefer and Kochen.

Plane analytic geometry, differential and integral calculus, applications.

192. CALCULUS FOR ENGINEERS

Either term. Credit four hours. Prerequisite, 191. Fall term: M W F S 9, 11. Spring term: lectures, M W F 9, 11 plus recitation periods to be arranged. Preliminary examinations will be held at 7 p.m. on Mar. 2, Mar. 23, Apr. 20, May 18. Spring term, Messrs. Gershenson and Williamson.

Transcendental functions, technique of integration and multiple integrals, vector calculus, analytic geometry in space, partial differentiation, applications.

293. ENGINEERING MATHEMATICS

Either term. Credit four hours. Prerequisite, 192. Fall term: lectures, M W F 8, 12 plus recitation periods to be arranged. Spring term: M W F S 8, 12. Preliminary examinations will be held at 7 p.m. on Oct. 19, Nov. 30, Jan. 11. Fall term, Messrs. Robertson and Walker.

Vectors and matrices, first order differential equations, infinite series, complex numbers, applications. Problems for programing and running on the automatic computer will be assigned, and students are expected to have a knowledge of computer programing equivalent to that taught in Engineering 102.

294. ENGINEERING MATHEMATICS

Either term. Credit three hours. Prerequisite, 293. Fall term: M W F 8, 12. Spring term: lectures, M W 8, 12 plus recitation periods to be arranged. Preliminary examinations will be held at 7 p.m. on Mar. 15, Apr. 19, May 17. Spring term, Messrs. Hilton and Walker.

Linear differential equations, quadratic forms and eigenvalues, differential vector calculus, applications.

201-202. MATHEMATICS FOR SOCIAL SCIENTISTS

Throughout the year. Credit four hours a term. Prerequisite, upperclass standing. First term prerequisite to second. M W F 11. Mr. Sacks.

A treatment of calculus and other topics of interest to social scientists. This course will not prepare the student to continue in mathematics beyond the 400 level.

Applied Mathematics

313. TOPICS IN ALGEBRA AND ANALYSIS FOR ENGINEERS

Fall term. Credit four hours. Prerequisite, 213. Hours to be arranged.

Some topics in modern algebra and advanced calculus useful in engineering. As many topics as time permits will be treated rigorously. The algebra includes geometry of vector spaces, simple properties of linear operators including eigenvalues and eigenvectors. The topics in advanced calculus discussed are calculus of several variables, Lagrange multipliers, and Laplace transforms.

315-316. HIGHER CALCULUS

Throughout the year. Credit three hours a term. Prerequisite, 213. First term prerequisite to second. T Th S 10. Mr. Gross.

Primarily for students who have not had 222. Partial differentiation, multiple and line integrals, vector algebra (including matrices) and vector analysis, Fourier series, partial differential equations, complex variables, Laplace transforms. Emphasis is placed on a wide range of formal applications of the calculus rather than on the logical development.

421. APPLIED MATHEMATICS

Fall term. Credit four hours. Prerequisite, 222 or consent of the instructor. M W F 12, Th 2. Mr. Faris.

Sequences and infinite series. Norms, inner products, orthogonality, Fourier series and orthogonal functions. Self adjoint differential operators. Theorems of Stokes, Green, Gauss, etc. Introduction to complex variables.

422. APPLIED MATHEMATICS

Spring term. Credit four hours. Prerequisite, 421 or consent of the instructor. M W F 12, Th 2. Mr. Faris.

Continuation of complex variables. Conformal mappings. Harmonic functions. Some special functions. Laplace and Fourier transforms. Asymptotic expansions of function.

423. APPLIED ANALYSIS

Fall term. Credit four hours. Prerequisite, 422. M W F 12, Th 2.

Linear operators and integral equations. Calculus of variations. Application to eigenvalue problems. Green's function, and treatment of special problems of mathematical physics.

325. INTRODUCTORY NUMERICAL ANALYSIS

Fall term. Credit four hours. Prerequisite, 213. M W F 9. Mr. Walker.

The elements of modern numerical computations, including interpolation, numerical

differentiation and integration, and the solution of linear and nonlinear ordinary differential equations. The facilities of the Cornell Computing Center are available to the students, and problems will be run on the computer.

426. TOPICS IN NUMERICAL ANALYSIS

Spring term. Credit four hours. Prerequisites, 325, and 222 or 294, or consent of instructor. M W F 9. Mr. Walker.

Topics in numerical analysis selected from such fields as linear algebra, linear programming, polynomial approximation, and ordinary and partial differential equations.

415-416. MATHEMATICAL METHODS IN PHYSICS

Throughout the year. Credit four hours a term. Prerequisites, a good knowledge of the techniques of the calculus, such as given by 315-316 and at least two years of general physics. First term prerequisite to second. T W Th F 12. Mr. Fuchs.

For mature students who wish to acquire a wide background of mathematical techniques in one year. Lectures and problem work designed to give a working knowledge of the principal mathematical methods used in advanced physics. Topics include infinite series, Fourier series and integrals, Laplace transforms, complex variables, calculus of variations, matrices, integral equations, and eigenvalue problems.

427-428. ADVANCED DIFFERENTIAL EQUATIONS

Throughout the year. Credit four hours a term. Prerequisite, 421. M W F 12. Mr. Agnew.

Existence theorem and basic theory of ordinary differential equations. Selected topics from partial differential equations, including various methods of obtaining approximations to solutions.

[525. ADVANCED NUMERICAL ANALYSIS

Credit four hours. Prerequisite, 426. Not offered in 1965-1966.]

Analysis

311-312. ELEMENTARY ANALYSIS

Throughout the year. Credit four hours a term. Prerequisites, 213, 200. T Th S 10. Mr. Agnew.

A careful study of the topology of the real line. Functions. Theory of continuous functions of one real variable. Differentiation and integration of such functions. Series and sequences. Applications. The material of this course is similar to that of 411-412 below, but is taught at a more elementary level and at a slower pace. A student may not receive credit for both 311-312 and 411-412.

411-412. INTRODUCTION TO ANALYSIS

Throughout the year. Credit four hours a term. Prerequisite, 222. T Th S 10. (There will be a special honors section of this course. The instructor should be consulted.) Messrs. Chaiken and Eells.

An introduction to the theory of functions of real variables, stressing rigorous logical development of the subject rather than technique of applications. Topics include elementary topology, the real number system, continuous and differentiable functions, integration, convergence and approximation theorems, Fourier series, calculus in several variables, elementary differential geometry.

413. INTRODUCTION TO THE THEORY OF FUNCTIONS OF ONE COMPLEX VARIABLE

Fall term. Credit four hours. Prerequisite, 411-412. M W F 9. Mr. Earle.

A rigorous introduction to complex variable theory intended mainly for graduate students and mathematics majors. Complex numbers. Differential and integral calculus for functions of a complex variable including Cauchy's theorem and the calculus of residues. Elements of conformal mapping. Elements of several complex variables.

414. COMPLEX VARIABLE THEORY

Spring term. Credit four hours. Prerequisites, 412 and 413, or consent of the instructor. M W F 9. Mr. Earle.

A second course in complex variable theory. Topics include analytic continuation, harmonic functions, meromorphic and entire functions, sequences of analytic functions and normal families, conformal mapping, and various optional subjects.

512. REAL VARIABLES

Spring term. Credit four hours. Prerequisites, 411 and 500. M W F 3. Mr. Gross.

The modern theory of real functions. Topics will include the abstract integral, maximal ergodic theorem, theory of measure, L^p spaces, Fourier transforms and series, Radon measure, theory of functions of one real variable.

515. POTENTIAL THEORY

Fall term. Credit four hours. Prerequisites, 500 and 512. M W F 3. Mr. Deny.

A systematic development of modern potential theory based on Hilbert space methods. Energy, maximum principles, balayage, and capacity will be studied. Dirichlet spaces.

611-612. SEMINAR IN ANALYSIS

Throughout the year. Credit four hours. Prerequisite, consent of the instructor which must be secured in writing before registration in either term. Hours to be arranged. Mr. Eells.

615-616. FOURIER ANALYSIS

Throughout the year. Credit four hours a term. Prerequisites 500, 512, and some notions of complex variables. Hours to be arranged. Mr. Herz.

A study of certain topics in the theory of distributions and Fourier transforms of tempered distributions. Conditionally positive definite distributions, distributions invariant under certain groups, Laplace transforms in one and several variables, Hankel transforms. Applications to probability theory, potential theory, number theory, and partial differential equations. This course will differ markedly in content from courses in either traditional harmonic analysis or harmonic analysis on groups, although the basic properties of the Fourier transform will be developed *ab initio*.

619-620. PARTIAL DIFFERENTIAL EQUATIONS

Throughout the year. Credit four hours a term. Prerequisites, 512 and 613 or consent of instructor. Hours to be arranged. Mr. Payne.

Classification of partial differential equations. Selections from the principle existence and uniqueness results for elliptic, hyperbolic and parabolic differential equations. Applications.

[523-524. ANALYSIS ON MANIFOLDS

Throughout the year. Credit four hours a term. Prerequisite, 512. Not offered in 1965-1966.]

[528. VARIATIONAL METHODS

Spring term. Credit four hours. Prerequisites, 423, 416 or 619. Not offered in 1965-1966.]

[613. FUNCTIONAL ANALYSIS

Fall term. Credit four hours. Prerequisites, 432 and 512. Not offered in 1965-1966.]

[614. INTEGRAL EQUATIONS

Fall term. Credit four hours. Prerequisite, 413. Not offered in 1965-1966.]

[617. ANALYTIC NUMBER THEORY

One term. Credit four hours. Prerequisite, 511. Not offered in 1965-1966.]

[621. MEROMORPHIC FUNCTIONS

One term. Credit four hours. Prerequisite, 411. Not offered in 1965-1966.]

[622. RIEMANN SURFACES

One term. Credit four hours. Prerequisites, 511, 531, 550. Not offered in 1965-1966.]

[623. SEVERAL COMPLEX VARIABLES

Spring term. Credit four hours. Prerequisite, 411. Not offered in 1965-1966.]

[625. ERGODIC THEORY

Fall term. Credit four hours. Prerequisite, 512. Not offered in 1965-1966.]

[627. CALCULUS OF VARIATIONS

One term. Credit four hours. Prerequisites, 500 and 550. Not offered in 1965-1966.]

Algebra

331. LINEAR ALGEBRA

Fall term. Credit four hours. Prerequisites, 200 and 213. *A student may not receive credit in both 221 and 331.* (See 333 below.) M W F 10. Mr. Herz.

Emphasis on applications rather than theoretical development. Vectors, matrices, and linear transformations, affine and euclidean spaces, transformation of matrices, eigenvalues.

332. ALGEBRA AND NUMBER THEORY

Spring term. Credit four hours. Prerequisite, 221 or 331. M W F 10. Mr. Herz.

Definitions and examples of groups. Finite abelian groups, congruence classes, characters. The fundamental theorem of arithmetic. Imaginary quadratic fields. Course 332 will not serve as a prerequisite for courses numbered 500 or higher.

333. LINEAR ALGEBRA

Fall term 1965 only. Credit four hours. Prerequisites, 213 taken in spring or fall, 1964; or 221 taken in spring or fall, 1964, or spring, 1965. M W F 10.

Emphasis on applications, rather than theoretical development. Vector spaces and linear transformations. Unitary and Euclidean space. Bilinear and quadratic forms. Multilinear functions.

431-432. INTRODUCTION TO ALGEBRA

Throughout the year. Credit four hours a term. Prerequisite, 221 or 331. First term prerequisite to second. M W F 10. (There will be a special honors section of this course. The instructor should be consulted.) Mr. Rinehart.

A rigorous introduction to modern algebra. First term, linear algebra. Second term, introduction to algebraic systems such as groups, rings, modules and fields.

531. ALGEBRA

Fall term. Credit four hours. Prerequisite, 432. T Th 2-3:30. Mr. Rosenberg.

Finite groups, rings and fields, tensor algebra, Galois theory.

631-632. SEMINAR IN ALGEBRA

Throughout the year. Credit four hours. Prerequisite, consent of the instructor, which must be secured in writing before registration in either term. Hours to be arranged. Mr. Chase.

633. GROUP THEORY

Spring term. Credit four hours. Prerequisite 531. Hours to be arranged.

Theory of representations of finite groups with special emphasis on the representations over fields of characteristic 0.

637. ALGEBRAIC NUMBER THEORY

Spring term. Credit four hours. Prerequisite, 531. Hours to be arranged.

Valuations and extensions of valuations. Ideal theory. Factorization of ideals in field extensions. Finiteness of the class number. The unit theorem.

641. HOMOLOGICAL ALGEBRA

Fall term. Credit four hours. Prerequisite, 531. Hours to be arranged. Mr. Rinehart.

Categories, functors, derived functors. Applications.

[635. THEORY OF RINGS

Fall term. Credit four hours. Prerequisite, 531. Not offered in 1965-1966.]

[639. LIE ALGEBRAS

Fall term. Credit four hours. Prerequisite, 531. Not offered in 1965-1966.]

Geometry and Topology

352. ELEMENTARY TOPOLOGY

Spring term. Credit four hours. Prerequisite, 221 or 331. T Th S 9. Mr. Berstein.

Topics from elementary topology, such as index, fixed points, Jordan curve theorem,

vector fields. Elementary combinatorial topology of complexes, Euler characteristic, classification of surfaces.

451-452. CLASSICAL GEOMETRIES

Throughout the year. Credit four hours a term. Prerequisite, 331 or 431, which may be taken concurrently. First term prerequisite to second. T Th S 11.

Synthetic and analytic methods in affine, projective, and Euclidean geometry. The emphasis will be placed on the rigorous development of geometric systems from sets of axioms.

500. FOUNDATIONS OF MATHEMATICS

Fall term. Credit four hours. Prerequisite, 412. M W F 3. Mr. Gross.

Topics in general topology, including set theory, topological spaces, mappings, product spaces, metrization theorems, topological groups, etc. Application to functional analysis.

551-552. AN INTRODUCTION TO ALGEBRAIC TOPOLOGY

Throughout the year. Credit four hours a term. Prerequisites, 432 and 500. M W F 2. Mr. Gershenson.

Homology and cohomology theories of complexes, singular theory, fundamental group and introduction to homotopy theory, manifolds, geometric applications.

651-652. SEMINAR IN TOPOLOGY

Throughout the year. Credit four hours. Prerequisite, consent of the instructor, which must be secured in writing before registration in either term. Hours to be arranged. Fall term, Mr. Livesay. Spring term, Mr. West.

653-654. HOMOLOGY THEORY AND CATEGORY THEORY

Throughout the year. Credit four hours a term. Prerequisites, 531 and 551. Hours to be arranged. Fall term, Mr. Greenblatt. Spring term, Mr. Hilton.

Cohomology ring, cohomology operations, functional operations. Homotopy groups, exact sequences, homotopy operations, Hopf invariant. Non-abelian categories, multiplicative structures, limits. Abelian categories, exact couples. Spectral sequences, applications to calculation of homotopy groups and extraordinary cohomology theories.

667. ALGEBRAIC GEOMETRY

Spring term. Credit four hours. Prerequisites, 500 and 531. T Th 2-3:30. Mr. Rosenberg.

Affine and projective varieties. Divisors. Riemann-Roch theorem. Introduction to schemes.

[454. INTRODUCTION TO DIFFERENTIAL GEOMETRY

Spring term. Credit four hours. Prerequisite, 222. Not offered in 1965-1966.]

[663. MANIFOLDS

Fall term. Credit four hours. Prerequisites, 551 and basic notions of general topology and algebra. Not offered in 1965-1966.]

[655-656. HOMOTOPY THEORY

Throughout the year. Credit four hours a term. Prerequisite, 551. Not offered in 1965-1966.]

[669. LIE GROUPS

One term. Credit four hours. Prerequisites, 512 and 550. Not offered in 1965-1966.]

Probability and Statistics

370. ELEMENTARY STATISTICS

Fall term. Credit four hours. Prerequisites, 112, 122 or 202. M W F 12. Preliminary examinations will be held at 7:30 p.m. on Oct. 20, Nov. 10, Dec. 8, Jan. 12. Mr. Kiefer.

Topics in probability which are essential to an understanding of statistics; introduction to the principles underlying modern statistical inference and the rationale underlying choice of statistical methods in various situations. This is a terminal course, intended for those who in previous years took the old 371 and no further work in this area.

371. BASIC PROBABILITY

Fall term. Credit four hours. Prerequisite, 213 or 222. M W F 12. Preliminary examinations will be held at 7:30 p.m. on Oct. 20, Nov. 10, Dec. 8, Jan. 12.

Topics covered include combinatorics, important probability laws, expectations, moments, moment generating functions, limit theorems. Emphasis is on diverse applications and on development of use in statistical applications. While this course can serve as a terminal course in basic probability, it is primarily intended, when taken with 472, for students who in previous years took the old 371-472. (See also the descriptions of 370 and 571.)

472. STATISTICS

Spring term. Credit four hours. Prerequisite, 371. M W F 12. Preliminary examinations will be held at 7:30 p.m. on Mar. 2, Mar. 23, Apr. 20, May 18. Mr. Kiefer.

Classical and recently developed statistical procedures are discussed in a framework which emphasizes the basic principles of statistical inference and the rationale underlying the choice of these procedures in various settings. These settings include problems of estimation, hypothesis testing, large sample theory, experimental designs, sequential analysis and multiple decision problems. (See also the description of 370 and 572.)

571. PROBABILITY

Fall term. Credit four hours. Prerequisite, 412 or, with consent of the instructor, 416 or 422. M W F 12. Examinations and make-up lectures, when necessary, will be held on Thursday evenings at 7:30 p.m. Mr. Wolfowitz.

Fundamentals. Combinatorial problems. Distribution functions in one or several dimensions. Important probability laws. Expectation, moments, and characteristic functions. Stochastic convergence and the law of large numbers. The central limit theorem.

572. STATISTICAL INFERENCE

Spring term. Credit four hours. Prerequisite, 571. M W F 12. Mr. Wolfowitz.

Introduction to the theory of point estimation. Consistency, efficiency, and sufficiency; the method of maximum likelihood. The classical tests of hypotheses and their power. The theory of confidence intervals. The basic concepts of statistical decision theory. The fundamentals of sequential analysis.

Intended to furnish a rigorous introduction to mathematical statistics, the course is prerequisite to all advanced courses in statistics.

574. ADVANCED PROBABILITY

Spring term. Credit four hours. Prerequisite, 571. M W F 11. Mr. Robertson.

An introduction to Markov chains. Discrete and continuous time parameter chains. Applications to birth and death processes and branching processes.

671-672. SEMINAR IN STATISTICS

Throughout the year. Credit four hours. Prerequisite, consent of the instructor, which must be secured in writing before registration in either term. M 4-6. Mr. Wolfowitz.

675. STATISTICAL ESTIMATION

Fall term. Credit four hours. Prerequisite, 572. Hours to be arranged. Mr. Farrell.

Randomization, sufficiency, completeness, minimum variance estimators. Derivation of sequential minimax estimators by the methods of differential inequalities, Bayes solutions, and invariance. The Neyman-Pearson theory of testing hypotheses and interval estimation.

676. DECISION FUNCTIONS

Spring term. Credit four hours. Prerequisite, 675. Hours to be arranged. Mr. Farrell.

Wald's theory of decision functions. Multi-decision problems. Existence theorems, complete class theorems, and other general decision theoretic results. Optimum character of the sequential probability ratio test. Recent developments.

[575. INFORMATION THEORY

Fall term. Credit four hours. Prerequisite, 411, or with consent of the instructor, 416 or 421. Not offered in 1965-1966.]

[673. ANALYSIS OF VARIANCE

Fall term. Credit four hours. Prerequisite, 572. Not offered in 1965-1966.]

[674. DESIGN OF EXPERIMENTS

Spring term. Credit four hours. Prerequisite, 573. Not offered in 1965-1966.]

[677. STOCHASTIC PROCESSES

Fall term. Credit four hours. Prerequisite, 512 or 574. Not offered in 1965-1966.]

Mathematical Logic

381. ELEMENTARY MATHEMATICAL LOGIC

Spring term. Credit four hours. Prerequisite, 122 or 200. M W F 11. Mr. Kochen.

Propositional calculus via truth tables and as a formal axiomatic theory. Boolean algebras. Introduction to the predicate calculus.

481-482. LOGIC

Throughout the year. Credit four hours a term. Prerequisite, 412, 432 or consent of instructor. M W F 9. Fall term, Mr. Kochen. Spring term, Mr. Nerode.

A study of elementary and advanced topics in mathematical logic. Theorems of Herbrand, Gentzen, Church and Gödel on provability and undecidability. Theory of recursive functions and recursively enumerable sets.

681-682. SEMINAR IN LOGIC

Throughout the year. Credit four hours a term. Prerequisite, consent of the instructor. Hours to be arranged. Mr. Sacks.

683. THEORY OF MODELS

Fall term. Credit four hours. Prerequisite, 481-482. Hours to be arranged. Mr. Nerode.

Axiomatic set theory. Theorems of Gödel, Cohen on consistency and independence of the axiom of choice and the continuum hypothesis.

[591-592. SEMINAR ON AUTOMATA

Fall term. Credit four hours. Not offered in 1965-1966.]

[685. METAMATHEMATICS

Spring term. Credit four hours. Prerequisite, 482. Not offered in 1965-1966.]

690. SUPERVISED READING AND RESEARCH

MODERN FOREIGN LANGUAGES AND LITERATURES

Courses in modern foreign languages and literatures are offered as follows:

DEPARTMENT OF GERMAN LITERATURE

Mr. O. J. Matthijs Jolles, Acting Chairman.

* Courses in German literature.

DIVISION OF MODERN LANGUAGES

Mr. J M. Cowan, Director.

All elementary and intermediate language courses; conversation and composition courses; courses in linguistics.

DEPARTMENT OF ROMANCE STUDIES

Mr. J.-J. Demorest, Chairman.

Courses in French literature, Italian literature, and Spanish literature. See separate language headings for course listings and information about major programs.

DEPARTMENT OF RUSSIAN LITERATURE

Mr. G. Gibian, Chairman.

Courses in Russian literature.

Burmese

Mr. R. B. Jones, Jr., and Staff.

101-102. ELEMENTARY COURSE

Throughout the year. Credit six hours a term. Hours to be arranged.

201-202. BURMESE READING

Throughout the year. Credit three hours a term. Prerequisite for 201, Qualification in Burmese; for 202, Burmese 201 or consent of the instructor. Hours to be arranged. Mr. Jones.

203-204. COMPOSITION AND CONVERSATION

Throughout the year. Credit three hours a term. Prerequisite for 203, Qualification in Burmese; for 204, Burmese 203 or consent of the instructor. Hours to be arranged. Mr. Jones.

301-302. ADVANCED BURMESE READING

Throughout the year. Credit four hours a term. Prerequisite, Burmese 201-202 or the equivalent. Hours to be arranged. Mr. Jones.

Selected readings in Burmese writings in various fields.

Cebuano (Bisayan)

Mr. J. U. Wolff and Staff.

101-102. ELEMENTARY COURSE

Throughout the year. Credit six hours. Offered according to demand. Hours to be arranged.

Chinese

Messrs. N. C. Bodman, F. C. Chin, Miss Harriet Mills, Mrs. Pei Shin Ni, Mr. H. Shadick, and Staff.

For a major involving Chinese studies, see Department of Asian Studies.

101-102. ELEMENTARY CHINESE

Throughout the year. Credit six hours a term. M-F 8, M W F 9.

201-202. INTERMEDIATE CHINESE I

Throughout the year. Credit three hours a term. Prerequisite, Qualification in Chinese. M W F 10 and two hours to be arranged.

213. INTRODUCTION TO CLASSICAL CHINESE

Fall term. Credit three hours. Prerequisite, Qualification in Chinese. M W F 11. Mr. Shadick.

Systematic analysis of basic patterns in classical Chinese; study of texts; exercises in composition. An introduction to the literary style, primarily for students intending to work in classical literature, history, or art history.

221-222. ELEMENTARY HOKKIEN CHINESE

Throughout the year. Credit three hours a term. Prerequisite, Qualification in Chinese and consent of the instructor. Hours to be arranged. Mr. Bodman.

301-302. INTERMEDIATE CHINESE II

Throughout the year. Credit four hours a term. Prerequisite, Chinese 202 or equivalent. M T W Th F 11.

Readings and drill in modern expository Chinese, three hours; introduction to classical Chinese, two hours. This latter is intended to prepare students of modern Chinese to understand classical forms and quotations occurring in vernacular texts and to use dictionaries and reference works.

312. INTERMEDIATE CLASSICAL CHINESE

Spring term. Credit three hours. Prerequisite, Chinese 213 or 301. M W F 11. Mr. Shadick.

Study of texts in a variety of styles, ancient and modern.

313. CHINESE HISTORICAL AND PHILOSOPHICAL TEXTS

Fall term. Credit four hours. Prerequisite, Chinese 302 or 312 or consent of the instructor. T Th 11 and one hour to be arranged. Mr. Shadick.

Selections from the standard histories, the classical philosophers, and early modern reformers.

402. HISTORY OF THE CHINESE LANGUAGE

Spring term. Credit four hours. Prerequisite, consent of the instructor. Hours to be arranged. Mr. Bodman.

403. LINGUISTIC STRUCTURE OF CHINESE

Fall term. Credit four hours. Prerequisite, consent of the instructor. Hours to be arranged. Mr. Bodman.

411-412. ADVANCED READINGS IN MODERN CHINESE

Throughout the year. Credit four hours a term. Prerequisite, Chinese 302. Hours to be arranged.

414. CLASSICAL CHINESE PROSE

Spring term. Credit four hours. Prerequisite, consent of the instructor. Hours to be arranged.

[416. CLASSICAL CHINESE POETRY AND DRAMA

Spring term. Credit four hours. Prerequisite, consent of the instructor. Hours to be arranged. Mr. Shadick. Not offered in 1965-66.]

420. READINGS IN THE TRADITIONAL CHINESE NOVEL

Either spring or fall term, according to demand. Credit two or four hours. Prerequisite, consent of the instructor. Hours to be arranged.

521-522. ADVANCED READINGS IN CLASSICAL CHINESE

Throughout the year. Credit two or four hours a term. Prerequisite, consent of the instructor. Hours to be arranged.

571-572. SEMINAR IN CHINESE LITERATURE

Throughout the year. Credit and hours to be arranged. Mr. Shadick.

SINO-TIBETAN LINGUISTICS

(Sec Linguistics 581-582.)

Czech

Mr. R. L. Leed.

221-222. ELEMENTARY COURSE

Throughout the year. Offered according to demand. Credit three hours a term. Prerequisite, Qualification in Russian and consent of the instructor. Hours to be arranged.

Dutch

Mr. J. M. Echols.

151-152. ELEMENTARY GRADUATE READING COURSE

Throughout the year. Credit three hours a term. Hours to be arranged.

English as a Second Language

The following two courses are offered by the Division of Modern Languages. Foreign students should consult a member of that Division at Morrill Hall 206.

102. ENGLISH AS A SECOND LANGUAGE

Fall term. Credit six hours. Prerequisite, placement by the instructor. Hours to be arranged.

211-212. ENGLISH AS A SECOND LANGUAGE

Throughout the year. Credit three hours a term. Prerequisite, placement by the instructor. M W F 11.

French

Mr. G. Brogyanyi, Miss Alice Colby, Messrs. P. de Man, J.-J. Demorest, H. Dieckmann, D. I. Grossvogel, R. A. Hall, Jr., C. S. Leonard, Jr., E. P. Morris, Mrs. Jean Parrish, Messrs. B. L. Rideout, A. Seznec, and Staff.

Students who elect to major in French should have completed French 201-202 and French 203-204, and they should consult the departmental adviser, Mr. Seznec, as soon as possible.

For completion of a major, French 382 or its equivalent must be successfully completed, and twenty-eight hours of French literature courses selected from 300 and 400 courses, with papers to be written in French. At least one term of a seminar must be included. One term of the following courses: French 401, 402, 403, may be substituted for four hours of the twenty-eight required in French literature (but not for the required semester of a seminar). One four-hour course offered by the Department of Comparative Literature may be accepted toward the twenty-eight required hours in French literature if prior approval has been obtained from the major adviser.

No specific number of related courses will be required. The student will work out a coordinated program with the help of his adviser. It is expected that one quarter to one third of the student's time spent outside the major field will be the equivalent of a minor.

The requirements for Honors are similar to those of the major except that the student must (1) have an average grade of 85 in French courses; (2) write a thesis (essay) in French in his senior year; (3) take a general comprehensive examination at the end of his senior year. He may be released from one course during either term of his senior year to write his thesis. Provisions will be made for students in the Junior Year Abroad programs to prepare for Honors.

The Distribution I requirement in the Humanities is satisfied in French by French 201-202 if this course is not used in fulfillment of the language requirement.

101. ELEMENTARY COURSE

Either term. Credit six hours. Fall term: drill, daily at 8, 9, 11, or 12; lectures, T Th 12 or 2. Spring term: drill, daily at 8 or 11; lectures, T Th 2.

102. ELEMENTARY COURSE

Either term. Credit six hours. Prerequisite, French 101 or its equivalent. Students who have previously studied French should consult page 00 before registering for this course. Drill, daily at 8, 9, 10, 11, or 12. Lectures: fall term: M W 8 or 11 or T Th 9 or 10; spring term, M W 11 or T Th 12 or 2.

112. ELEMENTARY COURSE

Either term. Credit three hours. Prequalification course for students entering above the level of placement in French 102. Fall term: drill, M W F 9 or 12 or T Th S 10 or 11; lectures, Th 12 or F 11. Spring term, drill, M W F 11 or T Th S 10; lecture M 12.

151. ELEMENTARY GRADUATE READING COURSE

Either term. Credit three hours. Open only to graduate students. M W F 4:30 or 7.

Designed to help students prepare for the Graduate Reading Examination administered by the Graduate School.

152. ELEMENTARY GRADUATE READING COURSE

Either term. Credit three hours. Open only to graduate students. Prerequisite, French 151 or one year of college French or two years of high school French. M W F 4:30 or 7.

Designed to help students prepare for the Graduate Reading Examination administered by the Graduate School.

201-202. INTRODUCTION TO FRENCH LITERATURE

Both courses given each term. Credit three hours a term. Prerequisite, Qualification in French (for definition of Qualification, see page 13.) Course 201 is prerequisite to 202. In the fall, French 201 will be offered on M W F 9, 10, 11, 12; T Th S 9, 11; French 202 on T Th S 9, 11. In the spring, French 201 will be offered on T Th S 9, 11; French 202 on M W F 9, 10, 11, 12; T Th S 9, 11, 12. Miss Colby, Messrs. Brogyanyi, Demorest, Grossvogel, Morris, Mrs. Parrish, Mr. Seznec, and staff.

Serves as an intermediate reading course and as an introduction to literature. Complete works are read representing significant writings from the Middle Ages to the present: in French 201, such poets and playwrights as Ronsard, La Fontaine, Baudelaire, Mallarmé, Corneille, Molière, and Racine; in French 202, the prose writings of such authors as Montaigne, Rabelais, Proust, and Sartre. The object is to acquire reading facility while developing a critical appreciation of a foreign literature. As much English as is necessary will be used in sections at the beginning; as the year goes on, classes will be conducted more and more in French.

203. INTERMEDIATE CONVERSATION

Either term. Credit three hours. Prerequisite, Qualification in French (for definition of Qualification, see page 13). Students who have passed Courses 102 or 112 but failed Qualification may be admitted on consent of the course coordinator. Mr. Leonard. Fall term: M W F 9 or 11 plus T Th 8, 9, 10, 11, 12. Spring term: M-F at 9 or 11.

Guided conversation, grammar drill, and oral and written composition. Emphasis is placed upon increasing the student's oral command of French.

204. INTERMEDIATE COMPOSITION

Either term. Credit three hours. Prerequisite, French 203. Fall term: M-F 2. Spring term: lectures, M W F 10 or 2; sections, T Th 12 or 2.

Continuation of the work of French 203, with special attention to accurate and idiomatic expression in written French. Oral and written drill.

301-302. ELEMENTARY FRENCH FOR UPPERCLASSMEN

Throughout the year. Credit four hours a term. Prerequisite, satisfaction of language requirement for graduation and consent of the instructor. M W F 10. Mr. Leonard.

Designed to impart a sound knowledge of the language for students who need it as a tool for research or who plan to go on to graduate school.

303. ADVANCED COMPOSITION AND CONVERSATION

Fall term. Credit four hours. Prerequisite, French 204. T Th 2-4.

Study of the stylistic resources of modern French, based on reading and analysis of selected texts. Detailed study of present-day syntax. Discussion, oral and written drill.

304. ADVANCED COMPOSITION AND CONVERSATION

Spring term. Credit four hours. Prerequisite, French 303. T Th 2-4.

Continuation of the work in French 303.

[318. POETRY OF THE FIFTEENTH CENTURY

To be offered in 1966-1967.]

[321. INTRODUCTION TO SIXTEENTH-CENTURY POETRY

To be offered in 1966-1967.]

[324. POETRY OF THE BAROQUE AGE

To be offered in 1966-1967.]

333. CORNEILLE AND RACINE

Fall term. Credit four hours. Prerequisite, French 201-202 or consent of the instructor. M W F 10. Mr. Seznec.

The pursuit of two themes, *l'homme caché, le Dieu caché*, in the theater of Corneille and of Racine. Lectures in French, classroom discussion, written reports.

334. THE STAGE AS MAGICAL CONVERGENCE: FIVE
EXPERIMENTAL PLAYS AND THEIR PLAYWRIGHTS

Spring term. Credit four hours. Prerequisite, French 201-202 or consent of the instructor. M W F 11. Mr. Grossvogel.

L'illusion comique (Corneille), *Saint-Genest* (Rotrou), *Dom Juan* (Molière), *Hérodiade* (Mallarmé), *Les Nègres* (Genet). The dramatic achievements of five playwrights who broke with traditional forms of the drama in order to express a private and transcendental vision will be analyzed. The plays will be examined within their historical context and the traditions from which they depart. Other plays by these authors will be read as well as theoretical formulations by them and others. There will be two lectures a week in French, the third weekly meeting of the course being reserved for class discussion.

[342. THE NOVEL IN THE EIGHTEENTH CENTURY

To be offered in 1966-1967.]

344. THEATER OF THE EIGHTEENTH CENTURY

Spring term. Credit four hours. Prerequisite, French 201-202 or consent of the instructor. T Th S 10. Mrs. Parrish.

Plays by the major figures of the age: Lesage, Marivaux, Voltaire, and Beaumarchais, with background reading in works of Crébillon, Diderot, and Sedaine. Discussions in French, written reports.

351. THE NOVEL OF THE ROMANTIC PERIOD

Fall term. Credit four hours. Prerequisite, French 201-202 or consent of the instructor. M W F 11. Mr. Demorest.

Mme. de Staël, Chateaubriand, Constant, Nodier, Stendhal, Balzac, George Sand, and Hugo. Lectures in French, classroom discussion, written reports.

[353. THE NOVEL FROM 1857 TO THE PRESENT

To be offered in 1966-1967.]

354. POETRY OF THE POST-ROMANTIC PERIOD

Spring term. Credit four hours. Prerequisite, French 201-202 or consent of the instructor. T Th S 11. Mr. Seznec.

Baudelaire, Rimbaud, Verlaine, Mallarmé, and other poets associated with symbolism. Lectures in French, classroom discussion, written reports.

[361. MAJOR DRAMATISTS OF THE TWENTIETH CENTURY

To be offered in 1966-1967.]

[362. MAJOR NOVELISTS OF THE TWENTIETH CENTURY

To be offered in 1966-1967.]

[366. PROUST: IN SEARCH OF TIME PAST

To be offered in 1966-1967.]

[401-402. HISTORY OF THE FRENCH LANGUAGE

Throughout the year in alternate years. Credit four hours a term. Prerequisite, Qualification in French and Linguistics 201 or 301. M W F 2. Mr. Leonard. Not offered in 1965-1966.]

403. LINGUISTIC STRUCTURE OF FRENCH

Fall term in alternate years. Credit four hours. Prerequisites, Qualification in French and Linguistics 201 or 301. M W F 3. Mr. Leonard.

A descriptive analysis of present-day French, with emphasis on its phonetics, phonemics, morphology, and syntax. Required of students seeking certification by New York State.

THE COMPARATIVE STUDY OF THE ROMANCE LANGUAGES

(See Linguistics 441-442, 443-444, 445, 446, 449.)

404. FRENCH FOR TEACHERS

Spring term. Credit four hours. Prerequisite, Qualification in French. Hours to be arranged. Mr. Rideout.

Survey of current teaching methods, preparation of teaching materials, selection and use of textbooks and realia, further study of phonetics, syntax, and culture as needed. Required of students seeking certification by New York State.

415-416. LITERATURE OF THE MIDDLE AGES

Throughout the year. Credit four hours a term. Prerequisite, two terms of 300-level French literature courses or consent of the instructor. May be entered in the second term by students with some previous training in Old French. M W F 9. Miss Colby.

Lectures in French, classroom discussion, written reports. Translation of Old French texts into English and modern French. The first term deals with the epic; the second term with the romance. Facility in reading Old French and appreciation of these two major genres are the primary goals of this course.

419. LA MATIÈRE DE BRETAGNE: STUDIES IN ARTHURIAN LITERATURE IN THE MIDDLE AGES

Fall term. Credit four hours. Prerequisite, two terms of 300-level French literature courses or consent of the instructor. F 2-4. Mr. Brogyanyi.

Lectures, classroom discussion, written reports.

424. RABELAIS

Spring term. Credit four hours. Prerequisite, two terms of 300-level French literature courses or consent of the instructor. T Th 9, plus a one-hour section meeting to be arranged. Mr. Morris.

Reading of the five books of Rabelais; close analysis of selected passages. The aim will be to teach precise and easy reading of Middle French, detailed familiarity with the work of Rabelais, and some understanding of historical and literary circumstances of the early Renaissance (and late Middle Ages) in France: folklore, popular culture, giant stories, monastic humor; the Lyons booktrade; classical languages and authors in early Humanism; Italian influences; natural sciences and humane letters; Humanism, church, and monarchy; Humanism and the Reformers; and the like. Speculations on the meaning of Rabelais's work. Toward the end of the term, reading examination on Books I-IV. Lectures and, ordinarily, discussions, in French.

[433. NOVEL OF THE SEVENTEENTH CENTURY

To be offered in 1966-1967.]

[436. LA FONTAINE

To be offered in 1966-1967.]

441. CURRENTS IN EIGHTEENTH-CENTURY INTELLECTUAL THOUGHT

Fall term. Credit four hours. Prerequisite, French 201-202 or consent of the instructor. T Th S 10. Mrs. Parrish.

Texts by Fontenelle, Buffon, Diderot, Montesquieu, Condillac, Voltaire, and Rousseau. Epistemological and esthetic concerns, scientific method and religious controversies will be analyzed as parts of a dialectic process rooted in the seventeenth century and struggling to emerge in nineteenth-century individualism. Written reports and classroom discussion.

[452. STENDHAL

To be offered in 1966-1967.]

[455. FLAUBERT

To be offered in 1966-1967.]

[459. MALLARMÉ

To be offered in 1966-1967.]

[460. MYTH IN THE THEATRE

To be offered in 1966-1967.]

[464. REPRESENTATIVE POETS OF THE TWENTIETH CENTURY

To be offered in 1966-1967.]

481. THE WRITING OF EXPOSITORY PROSE

Fall term. Credit four hours. Primarily for graduate students. Limited to ten students. Some qualified undergraduate majors will be admitted, as space permits. Prerequisite: (undergraduates) French 304; (graduates) placement at the departmental French language examination. T Th 2-3:30. Mr. Morris.

French 481 will normally be taken by all entering graduate students in French, with the exception of those exempted on the basis of the departmental examination, and those who, not being prepared to undertake work at the level of French 481, will be asked first to take French 303 or 304. French 481 is prerequisite to French 482. French 481 presupposes competence in the handling of French vocabulary, syntax and idiom. The purpose is to teach the writing of French as a means of effective expression on literary and historical subjects. Review of advanced grammar; translations from and into literary French; lexical, stylistic and methodological study of selected French critical works; literary *explication de textes*; study of French versification; analysis of literary topics, and composition of outlines. Short daily or weekly papers. Conducted in French.

482. STYLISTICS

Spring term. Credit four hours. Primarily for graduate students. Limited to ten students. Some qualified majors will be admitted, as space permits. Prerequisite: French 481 or consent of instructor. T Th 2-3:30. Mr. Seznec.

A study of the stylistic significance of tenses and of sentence structure. Short daily or weekly papers. Conducted in French.

497-498. HONORS COURSE IN FRENCH

Throughout the year. Credit four hours a term. May be entered in the second semester. Prerequisite, consent of the instructor. Hours to be arranged. Staff.

GRADUATE COURSES

Whereas 400-level courses are designed for upperclassmen and graduate students, the 500 courses in literature are intended solely for graduate students.

[514. CHRETIEN DE TROYES

To be offered in 1966-1967.]

516. THE LYRIC POETRY OF THE MIDDLE AGES

Spring term. Credit four hours. F 2-4. Miss Colby.

Emphasis will be placed on the poetry of the twelfth and thirteenth centuries.

[521. DU BELLAY

To be offered in 1966-1967.]

522. MONTAIGNE

Spring term. Credit four hours. M 4-6. Mr. Dieckmann.

A close study of several of Montaigne's *Essays*.

[523. RONSARD

To be offered in 1966-1967.]

[532. DESCARTES

To be offered in 1966-1967.]

[547. ESTHETICS AND LITERARY CRITICISM IN THE
EIGHTEENTH CENTURY

To be offered in 1966-1967.]

[548. MARIVAUX: LE DRAMATURGE ET LE ROMANCIER

To be offered in 1966-1967.]

549. LE CONTE PHILOSOPHIQUE ET MORAL

Fall term. Credit four hours. W 2-4. Mrs. Parrish.

Texts chosen from Voltaire, Marmontel, Diderot. Analysis of the genre and its antecedents.

552. THE ROMANTIC PERIOD

Spring term. Credit four hours. W 2-4. Mr. Demorest.

Topic: Chateaubriand et sa cour. Students should already have read *Atala* and *René*.

[554. GALLO-ROMANCE DIALECTOLOGY

Spring term in alternate years. Credit four hours. Prerequisite, Linguistics 431-432 or 433-434 or consent of the instructor. T Th 2. Mr. Leonard. Not offered in 1965-1966.]

555. HISTORICAL PHONOLOGY OF FRENCH

Fall term in alternate years. Credit four hours. Prerequisite, Linguistics 301 or consent of the instructor. T Th 2. Mr. Leonard.

The detailed study of sound changes from Latin to French, with attention to intermediate stages.

558. LINGUISTIC STRUCTURES OF OLD AND MIDDLE FRENCH

Spring term in alternate years. Credit four hours. Prerequisite, French 403 or consent of the instructor. T Th 2. Mr. Leonard.

An attempt at synchronic linguistic analysis of the French of approximately 1100 and 1600.

566. CONTEMPORARY POETRY

Spring term. Credit four hours. M 2-4. Mr. Grossvogel.

Topic: Paul Valéry: A concept of poetry.

567. CONTEMPORARY NOVEL

Fall term. Credit four hours. M 2-4. Mr. Grossvogel.

Topic: A moment in time: Practice and theory of the *nouveau roman*.

571-572. INTRODUCTION TO LITERARY STUDIES

Throughout the year. Credit two hours a term. Required of all first-year graduate students in Romance Studies. W 4-6. Staff.

600. SEMINAR IN FRENCH LINGUISTICS

Offered in accordance with student needs. Credit three hours a term. Hours to be arranged. Messrs. Hall or Leonard.

German

Messrs. V. T. Bjarnar, E. A. Blackall, D. Connor, J. M. Cowan, J. B. Dallett, P. de Man, H. Deinert, O. J. M. Jolles, H. L. Kufner, Mrs. Hildegard Kufner, Messrs. J. W. Marchand, H. H. Mietusch, B. E. Pike, H. R. Plant, J. R. Puryear, F. van Coetsem, Miss Elizabeth M. Wilkinson, the Lector, and Staff.

For those not majoring in German, the prerequisite for admission to courses numbered 330 to 360 is German 202 or consent of the instructor. To obtain instructor's consent, students who have not completed German 202 will be required to show that they know sufficient German to follow with profit the course for which they wish to register.

For admission to a major in German, the prerequisites are both German 202 and 204. Students may apply for admission to the major while they are enrolled in these courses, but acceptance will be conditional on their completing these courses with a grade of 70 or above. A prospective major should complete the Distribution I requirements by the end of his sophomore year, but petitions will be considered.

For the major in German, the following courses are to be completed: German 303, 304, 331, and at least five other 300- or 400-level courses in German. The natural progression to the major is through 201-202 and 203-204.

The Honors program in German consists of an integrated plan designed for the individual student and culminating in an Honors essay. For admission to the Honors program a student must have a minimum average of 85 in German courses, and the consent of Mr. Jolles. The Honors Reading Courses (451 and 452) may form part of the Honors student's program.

The Distribution I requirement in the Humanities is satisfied in German by German 201-202 if this course is not used in fulfillment of the language requirement.

Distribution II requirements can be fulfilled by German 201-202 together with a 300- or 400-level sequence of two courses, or by German 203-204, 303-304. This would constitute a useful minor in German for those majoring in another field and for those proceeding to Graduate School. The attention of students majoring in German is called to the courses offered by the Department of Comparative Literature, many of which complement the course offerings in German. German majors may, if they wish, use Comparative Literature courses to fulfill their second distribution requirement.

Of the courses listed below, those dealing with literature are staffed and administered by the Department of German Literature, and inquiries in

regard to them ought to be addressed to that Department (172 Goldwin Smith).

The courses dealing with language and linguistics are offered by the Division of Modern Languages, and administered by that Division (227 Morrill Hall).

101. ELEMENTARY COURSE

Either term. Credit six hours. Students who have previously studied German should consult page 00 before registering for this course. Fall term: drill, daily at 8, 9, 10, 11, or 12; lectures, M W 9, W F 12 or T Th 11. Spring term: drill, daily at 8, 10, or 11; lectures, T Th 9.

102. ELEMENTARY COURSE

Either term. Credit six hours. Students who have previously studied German should consult page 00 before registering for this course. Fall term: drill, daily at 8 or 10; lectures, T Th 9. Spring term: drill, daily at 8, 9, 10, 11 or 12; lectures, M W 9 or 10 or T Th 11.

112. ELEMENTARY COURSE

Either term. Credit three hours. Prequalification course for students entering above the level of placement in German 102. Fall term: drill, T Th S 9, 11 or 12; lecture, F 10. Spring term: drill, T Th S 9 or 12; lecture, F 10.

151. ELEMENTARY GRADUATE READING COURSE

Either term. Credit three hours, M W F 4:30 or 7.

Designed to help students prepare for the Graduate Reading Examination administered by the Graduate School.

152. ELEMENTARY GRADUATE READING COURSE

Either term. Credit three hours. Prerequisite, German 151 or one year of college German or two years of high school German. M W F 4:30 or 7.

Designed to help students prepare for the Graduate Reading Examination administered by the Graduate School.

201. MASTERPIECES OF GERMAN LITERATURE

Either term. Credit three hours. Prerequisite, Qualification in German (for definition of Qualification see page 13). Students who have passed Courses 102 or 112 but failed Qualification may be admitted on consent of the course coordinator, Mr. Deinert. Fall term: M W F 8, 9, or 11 or T Th S 9 or 10. Spring term: M W F 9 or 11 or T Th S 9 or 11. Messrs. Deinert, Dallett, Connor, the Lector, and Staff.

The aim is to introduce the students to German literature by the reading of notable texts ranging chronologically from Lessing and Goethe to the middle of the nineteenth century.

202. MASTERPIECES OF GERMAN LITERATURE

Either term. Credit three hours. Prerequisite, German 201. Fall term: M W F 9 or T Th S 9 or 11. Spring term: M W F 12, or 2 or T Th S 9 or 10. Messrs. Deinert, Dallett, Connors, the Lector, and Staff.

Continuation of the sequence in 201 up to Rilke and Brecht.

203. INTERMEDIATE COMPOSITION AND CONVERSATION

Either term. Credit three hours. Prerequisite, Qualification in German (for definition of Qualification see page 13). Students who have passed Courses 102 or 112 but failed Qualification may be admitted on consent of the course coordinator, Mr. Plant. Fall term: M W F 9 or 10 or T Th S 9 or 10; lecture, F 2. Spring term: M W F 9 or T Th S 9; lecture, F 2.

Guided conversation and oral and written composition; with special attention to accurate and idiomatic expression in German.

204. INTERMEDIATE COMPOSITION AND CONVERSATION

Either term. Credit three hours. Prerequisite, German 203 or consent of the instructor. Fall term: M W F 12. Spring term: M W F 9 or 12 or T Th S 9.

Continuation of the work of German 203. Emphasis is placed on increasing the student's active vocabulary and command of grammatical patterns.

301-302. ELEMENTARY GERMAN FOR UPPERCLASSMEN

Throughout the year. Credit four hours a term. Prerequisite, satisfaction of language requirement for graduation and consent of the instructor. M W F 10.

Designed to impart a sound knowledge of the language for students who need it as a tool for research or who plan to go on to graduate school.

303. ADVANCED COMPOSITION AND CONVERSATION

Fall term. Credit four hours. Prerequisite, German 204 or consent of the instructor. M W F 10.

Emphasis is placed upon increasing the student's oral and written command of German. Detailed study of present-day syntax.

304. ADVANCED COMPOSITION AND CONVERSATION

Spring term. Credit four hours. Prerequisite, German 303 or consent of the instructor. M W F 10.

Further study of German syntax with emphasis on different levels of style. Selected texts will serve as the basis for practice in written and oral expression.

331. OUTLINES OF GERMAN LITERATURE UP TO 1700

Fall term. Credit four hours. Prerequisite, German 202 or consent of the instructor. T Th S 10. Mr. Dallett.

The development of German literature from the earliest monuments illustrated by the reading of selected texts.

353. LESSING AND THE ENLIGHTENMENT

Fall term. Credit four hours. Prerequisite, German 202 or consent of the instructor. M W F 9. Mr. Connor.

354. SCHILLER UND DIE DEUTSCHE KLASSIK

Spring term. Credit four hours. Prerequisite, German 202 or consent of the instructor. M W F 9. Mr. Jolles. This course will be conducted in German.

Schiller's development as a dramatist, poet, and thinker. The emergence of German classicism and Schiller's part in its formation.

355. THE YOUNG GOETHE

Fall term. Credit four hours. Prerequisite, German 202 or consent of the instructor. M W F 12. Mr. Jolles.

A study of Goethe's development as a writer from the *Sturm und Drang* up to the Italian journey, with special reference to his poetry written before 1786, his *Götz von Berlichingen*, *Werther*, *Iphigenie*, *Torquato Tasso*, and *Egmont*.

356. THE LATER GOETHE

Spring term. Credit four hours. Prerequisite, German 202 or consent of the instructor. It is recommended that students taking this course should try to take 355 first. M W F 12. Miss Wilkinson.

A study of Goethe's development after the Italian journey. A full study of *Faust* (Parts One and Two) and some of the later poetry will be included.

357. DEUTSCHE ROMANTIK

Fall term. Credit four hours. Prerequisite, German 202 or consent of the instructor. T Th S 9. The Lector. This course will be conducted in German.

German literature in the first half of the nineteenth century, with special reference to the Romantic movement itself and its effect on the period 1830-1850.

358. REALISM AND NATURALISM

Spring term. Credit four hours. Prerequisite, German 202 or consent of the instructor. T Th S 9. Mr. Deinert.

German literature in the second half of the nineteenth century.

359. PROSE FICTION FROM THOMAS MANN TO HEINRICH BÖLL

Fall term. Credit four hours. Prerequisite, German 202 or consent of the instructor. M W F 10. Mr. Pike.

A study of the development of the novel and short story in the twentieth century, with detailed study of the more important works.

360. POETRY AND DRAMA FROM RILKE TO BRECHT

Spring term. Credit four hours. Prerequisite, German 202 or consent of the instructor. M W F 10. Mr. Pike.

A study of the development of lyrical poetry and the drama in the twentieth century, with detailed study of some of the more important works.

401. HISTORY OF THE GERMAN LANGUAGE I

Fall term in alternate years. Credit four hours. Prerequisites, German 204 or consent of the instructor and Linguistics 201 or 301 taken previously or concurrently. M W F 11. Mr. van Coetsem.

The relation of German to English and other Indo-European languages.

402. HISTORY OF THE GERMAN LANGUAGE II

Spring term in alternate years. Credit four hours. Prerequisite, German 401 or consent of the instructor. M W F 11. Mr. Marchand.

The development of the German language, i.e. its phonology, morphology, syntax, and lexicon up to about the year 1500.

403. LINGUISTIC STRUCTURE OF GERMAN

Fall term. Credit four hours. Prerequisites, German 204 or consent of the instructor and Linguistics 201 or 301 taken previously or concurrently. M W F 10. Mr. Puryear.

A descriptive analysis of present-day German, with emphasis on its phonetics, phonemics, morphology, and syntax.

404. GERMAN FOR TEACHERS

Spring term. Credit four hours. Prerequisite, German 403. M W F 10. Mr. Puryear.

Methods of teaching the language based on a contrastive study of the structures of English and German. Extensive outside reading, reports on textbooks, discussion of various teaching aids and realia. Required for provisional New York State teacher certification.

405. INTRODUCTION TO MIDDLE HIGH GERMAN

Fall term. Credit four hours. Prerequisite, consent of the instructor. M W F 11.

Intended for students with no previous knowledge of Middle High German; will begin with study of the Middle High German language and then proceed to the reading of selected texts.

406. MIDDLE HIGH GERMAN LITERATURE

Spring term. Credit four hours. Prerequisite, German 405. M W F 11.

The main authors and literary trends of the Middle High German period will be discussed in connection with the reading of extensive selections from the works of the great epic and lyric poets between 1190 and 1230.

[451. HONORS READING COURSE

Fall term. Credit four hours. For Honors students only. The Staff. Not offered in 1965-66.]

452. HONORS READING COURSE

Spring term. Credit four hours. For Honors students only. Messrs. Connor and Dallett.

Extensive reading of texts supplementary to regular course work, under the direction of a member of the department, who will discuss the student's work with him four or five times a term.

COURSES FOR GRADUATE STUDENTS

These courses are intended solely for graduate students; undergraduates will not be admitted. Corresponding courses at undergraduate level will be found listed under courses at the 300 and 400 level.

500. SPRECH- UND SCHREIBÜBUNGEN

Throughout the year. No credit. Hours to be arranged. The Lector.

Required of all graduate students in German studies. Topic: Aspekte und Probleme des heutigen Deutschlands.

[501. INTRODUCTION TO GERMANIC LINGUISTICS

Fall term in alternate years. Credit four hours. W 2-4. Mr. Marchand. Not offered in 1965-1966.]

[502. GOTHIC

Spring term in alternate years. Credit four hours. W 2-4. Mr. Marchand. Not offered in 1965-1966.]

503. OLD SAXON

Fall term in alternate years. Credit four hours. M W F 2. Mr. van Coetsem.

504. OLD HIGH GERMAN

Spring term in alternate years. Credit four hours. M W F 2. Mr. Marchand.

509. OLD NORSE I

Fall term. Credit four hours. Hours to be arranged. Mr. Bjarnar.

510. OLD NORSE II

Spring term. Credit four hours. Hours to be arranged. Mr. Bjarnar.

511. SAGAS

Fall term. Credit four hours. Prerequisite, German 510 or consent of the instructor. Hours to be arranged.

512. EDDA

Spring term. Credit four hours. Prerequisite, German 510 or consent of the instructor. Hours to be arranged.

521. MIDDLE HIGH GERMAN LITERATURE I

Fall term. Credit four hours. Prerequisite, German 406 or consent of the instructor. M 2-4. Topic to be announced.

522. MIDDLE HIGH GERMAN LITERATURE II

Spring term. Credit four hours. Prerequisite, German 406 or consent of the instructor. M 2-4. Topic to be announced.

[COMPARATIVE GERMANIC LINGUISTICS

(See Linguistics 541-542.)]

524. GERMAN POETRY OF THE LATE MIDDLE AGES

Spring term. Credit four hours. F 3-5. Mr. Dallett.

[526. SIXTEENTH-CENTURY GERMAN LITERATURE

Spring term. Credit four hours. F 2-4. Mr. Dallett. Not offered in 1965-66.]

527. SEVENTEENTH-CENTURY GERMAN LITERATURE

Fall term. Credit four hours. F 3-5. Mr. Dallett. Topic: Baroque Lyric Poetry.

530. EIGHTEENTH-CENTURY LITERATURE OTHER THAN
GOETHE

Spring term. Credit four hours. W 2-4. Miss Wilkinson.

Topic: Schiller's *Aesthetic Education* and the temper of the eighteenth century.

531. GOETHE

Fall term. Credit four hours. T 2-4. Mr. Jolles.

Topic: *Faust*.

[533-534. TOPICS IN GERMAN ROMANTICISM

Fall or spring, one term only. Credit four hours. Th 2-4. Subject to be announced.
Mr. Blackall. Not offered in 1965-1966.]

535-536. NINETEENTH-CENTURY GERMAN LITERATURE

Fall term only. Credit four hours. Th 2-4. Mr. Dallett. Topic: The Novelle.

537-538. TWENTIETH-CENTURY GERMAN LITERATURE

Credit four hours a term. Fall term: Thomas Mann, Mr. Pike. W 2-4. Spring term:
Rilke. Mr. Deinert. Th 2-4.

540. HISTORY AND METHODS OF MODERN GERMAN
LITERARY CRITICISM

Spring term. Credit four hours. T 2-4. Mr. Jolles.

GERMAN HISTORY

See offerings in History.

SEMINARS FOR GRADUATE STUDENTS

These seminars are intended for graduate students who are beyond the first year of their graduate study. Each seminar will deal with a specific topic in more detail than is possible in the graduate courses. The topics of the seminars will vary from year to year.

[601. GERMAN DIALECTOLOGY

Fall term. Four hours credit. Hours to be arranged. Not offered in 1965-1966.]

[602. EARLY NEW HIGH GERMAN

Spring term. Four hours credit. Hours to be arranged. Not offered in 1965-1966.]

[611. GERMANIC PALAEOGRAPHY AND CODICOLOGY

Fall term. Four hours credit. Hours to be arranged. Not offered in 1965-1966.]

[612. COMPARATIVE GERMANIC CULTURES

Spring term. Four hours credit. Hours to be arranged. Not offered in 1965-1966.]

651. SEMINAR IN GERMANIC LINGUISTICS I

Fall term. Four hours credit. Th 2. Mr. Marchand.

652. SEMINAR IN GERMANIC LINGUISTICS II

Spring term. Four hours credit. Th 2. Mr. van Coetsem.

[653-654. SEMINAR IN GERMAN LITERATURE

Throughout the year. Credit four hours a term. Not offered in 1965-66.]

Hindi

Messrs. G. H. Fairbanks, J. W. Gair, G. B. Kelley, and Staff.

101-102. ELEMENTARY COURSE

Throughout the year. Credit six hours a term. Drill, daily at 9; lecture, T Th 10.

201-202. HINDI READING

Throughout the year. Credit three hours a term. Prerequisite for 201, Qualification in Hindi; for 202, Hindi 201 or consent of the instructor. Hours to be arranged.

203-204. COMPOSITION AND CONVERSATION

Throughout the year. Credit three hours a term. Prerequisite for 203, Qualification in Hindi; for 204, Hindi 203 or consent of the instructor. Hours to be arranged.

301-302. READINGS IN HINDI LITERATURE

Throughout the year. Credit four hours a term. Prerequisite, Hindi 202. Hours to be arranged.

303-304. ADVANCED COMPOSITION AND CONVERSATION

Throughout the year. Credit four hours a term. Prerequisite, Hindi 204. Hours to be arranged.

305-306. ADVANCED HINDI READINGS

Throughout the year. Credit four hours a term. Prerequisite, Hindi 202. Hours to be arranged.

Intended for those who wish to do readings in history, government, economics, etc., instead of literature.

401. HISTORY OF HINDI

Fall term in alternate years. Credit four hours. Prerequisites, Hindi 101-102 or equivalent and Linguistics 202 or 302. Hours to be arranged. Mr. Fairbanks.

The development of Hindi to the present day. Phonology and grammar. Problems of dialect and the formation of "standard" Hindi.

600. SEMINAR IN HINDI LINGUISTICS

Either term. Credit three hours. Prerequisite, consent of the instructor. Hours to be arranged. Mr. Fairbanks, Mr. Gair, or Mr. Kelley.

See also Linguistics 331, 432, 521, 522, 530, 531, 532, 534.

Indonesian

Messrs. J. M. Echols, J. U. Wolff, and Staff.

101-102. ELEMENTARY COURSE

Throughout the year. Credit six hours a term. Hours to be arranged.

201-202. INDONESIAN READING

Throughout the year. Credit three hours a term. Prerequisite for 201, Qualification in Indonesian; for 202, Indonesian 201 or consent of the instructor. Hours to be arranged.

203-204. COMPOSITION AND CONVERSATION

Throughout the year. Credit three hours a term. Prerequisite for 203, Qualification in Indonesian; for 204, Indonesian 203 or consent of the instructor. Hours to be arranged.

301. READINGS IN INDONESIAN AND MALAY

Either term. Credit four hours. Prerequisite, Indonesian 201-202 or the equivalent. Hours to be arranged.

302. READINGS IN INDONESIAN AND MALAY

Either term. Credit four hours. Prerequisite, Indonesian 301. Hours to be arranged.

303. ADVANCED INDONESIAN CONVERSATION AND COMPOSITION

Either term. Credit four hours. Prerequisite, Indonesian 204 or the equivalent. Hours to be arranged.

305. ADVANCED READINGS IN INDONESIAN AND MALAY LITERATURE

Either term. Credit four hours. Prerequisite, Indonesian 302 or consent of the instructor.

403. LINGUISTIC STRUCTURE OF INDONESIAN

Either term. Credit four hours. Prerequisites, Indonesian 101-102 or the equivalent and Linguistics 201. Hours to be arranged. Mr. Wolff.

[MALAYO-POLYNESIAN LINGUISTICS

(See Linguistics 573.) Not offered in 1965-1966.]

SOUTHEAST ASIAN LITERATURE IN TRANSLATION

(See Literature 318.)

Italian

Messrs. G. P. Biasin, R. M. Durling, J. Freccero, R. A. Hall, Jr., and Staff.

For a major in Italian, consult Mr. Freccero and Mr. Hall.

101-102. ELEMENTARY COURSE

Throughout the year. Credit six hours a term. Fall term: drill, daily at 8 or 12; lecture T Th 10. Spring term: drill, daily at 9 or 12; lectures, T Th 10.

203. COMPOSITION AND CONVERSATION

Fall term as required. Credit three hours. Prerequisite, Qualification in Italian. T Th 2-3:30.

Guided conversation, grammar drill, and oral and written composition. Emphasis is placed on increasing the student's oral and written command of Italian.

204. COMPOSITION AND CONVERSATION

Spring term as required. Credit three hours. Prerequisite, Italian 203. T Th 2-3:30.

Continuation of the work of Italian 203, with special attention to accurate and idiomatic expression in Italian. Oral and written drill.

221-222. ELEMENTARY COURSE

Throughout the year. Credit three hours a term. Prerequisite, satisfaction of the language requirement in a Romance language or Latin. M W F 2.

304. ADVANCED COMPOSITION AND CONVERSATION

Given as required. Credit two to four hours. Prerequisite, Italian 204. Hours to be arranged.

313-314. DANTE

Throughout the year. Credit four hours a term. Prerequisite, reading knowledge of Italian and consent of the instructor. M W F 10. Mr. Freccero.

Intensive study of the *Divine Comedy*.

[321-322. STUDIES IN THE ITALIAN RENAISSANCE

To be offered in 1966-1967.]

361-362. THE MODERN PERIOD

Throughout the year. Credit four hours a term. Prerequisite, Italian 313-314 or consent of the instructor. T Th 2:30-4. Mr. Biasin.

Fall term: the nineteenth century. Spring term: the twentieth century.

[421. ITALIAN COMEDY

To be offered in 1967-1968.]

[422. RENAISSANCE DRAMA

To be offered in 1966-1967.]

[431. STRUCTURE OF ITALIAN

Fall term in alternate years. Credit four hours. Prerequisite, Qualification in Italian. M W F 9. Mr. Hall. Not offered in 1965-1966.]

[432. ITALIAN DIALECTOLOGY

Spring term in alternate years. Credit four hours. M W F 9. Mr. Hall. Not offered in 1965-1966.]

[433. OLD ITALIAN TEXTS

Fall term in alternate years. Credit four hours. Prerequisite, consent of the instructor. M W F 9. Mr. Hall. Will be offered in fall of 1967.]

[434. HISTORY OF THE ITALIAN LANGUAGE

Spring term in alternate years. Credit four hours. Prerequisites, Qualification in Italian and Linguistics 201 or 301. M W F 9. Mr. Hall. Will be offered in spring of 1968.]

[436. TASSO AND THE LATER RENAISSANCE

To be offered in 1966-1967.]

451-452. ROMANTICISM IN ITALY

Throughout the year. Credit four hours a term. Prerequisite, consent of the instructor. Hours to be arranged. Mr. Biasin.

The major currents in prose and poetry of the nineteenth century.

512. SEMINAR IN THE QUATTROCENTO

Spring term. Credit four hours. Prerequisite, consent of the instructor. Hours to be arranged. Mr. Freccero.

Analyses of major prose works of Italian Humanism.

513-514. SPECIAL TOPICS IN THE DIVINE COMEDY

Throughout the year. Credit four hours a term. Prerequisite, consent of the instructor. Hours to be arranged. Mr. Freccero.

521. CONTEMPORARY NOVEL

Fall term. Credit four hours. Prerequisite, consent of the instructor. Hours to be arranged. Mr. Biasin.

Cesare Pavese: An examination of the writer's complete works.

571-572. INTRODUCTION TO LITERARY STUDIES

Throughout the year. Credit two hours a term. Required of all first-year graduate students in Romance Studies. W 4-6. Staff.

600. SEMINAR IN ITALIAN LINGUISTICS

Offered in accordance with student needs. Credit three hours. Mr. Hall.

Japanese

Mr. W. J. McCoy, and Staff.

101-102. ELEMENTARY COURSE

Throughout the year. Credit six hours a term. M-F 9, M W F 10.

201-202. JAPANESE READING

Throughout the year. Credit three hours a term. Prerequisite for 201, Qualification in Japanese; for 202, Japanese 201 or consent of the instructor. M W F 10.

203-204. COMPOSITION AND CONVERSATION

Throughout the year. Credit three hours a term. Prerequisite for 203, Qualification in Japanese; for 204, Japanese 203 or consent of the instructor. M W F 2.

301-302. SELECTED READINGS IN JAPANESE

Throughout the year. Credit four hours a term. Prerequisite, Japanese 201-202 or consent of the instructor. Hours to be arranged.

Emphasis is on Koogo style but Būngo style is introduced in the second term.

305-306. INTRODUCTION TO CLASSICAL JAPANESE

Throughout the year. Credit four hours a term. Prerequisite, Japanese 301-302 or consent of the instructor. Hours to be arranged.

Emphasis is on Būngo and Kanbun styles of literature.

Japanese

Messrs. J. M. Echols, J. U. Wolff, and Staff.

221-222. ELEMENTARY COURSE

Throughout the year. Credit three hours a term. Prerequisite, Qualification in Indonesian. Hours to be arranged.

[223-224. INTERMEDIATE COURSE

Throughout the year. Credit three hours a term. Prerequisite, Japanese 222 or the equivalent. Hours to be arranged. Not offered in 1965-1966.]

Linguistics

Messrs. F. B. Agard, N. C. Bodman, J. M. Cowan, J. M. Echols, G. H. Fairbanks, J. W. Gair, R. A. Hall, Jr., C. F. Hockett, R. B. Jones, Jr., G. B. Kelley, H. L. Kufner, R. L. Leed, C. S. Leonard, Jr., J. W. Marchand, M. D. Saltarelli, D. F. Solá, R. H. Whitman, J. U. Wolff, and Staff.

Linguistics 201-202 satisfies Distribution I in the Social Sciences.

COURSES FOR UNDERCLASSMEN

201-202. INTRODUCTION TO THE SCIENTIFIC STUDY OF LANGUAGE

Throughout the year. Credit three hours a term. M W F 10. Fall term, Mr. Bordie. Spring term, Mr. Hockett.

An introductory survey course designed to acquaint the student with the nature of human language and with its systematic study.

203-204. THE STRUCTURE OF ENGLISH

Throughout the year. Credit three hours a term. Hours to be arranged. Mr. Cowan and Staff.

Modern structural analysis of English in the first term. In the second term, compara-

tive analysis using the various contrastive sketches of English and other languages recently published. Emphasis will be on the teaching of English as a second language.

COURSES PRIMARILY FOR UPPERCLASSMEN

301. GENERAL LINGUISTICS

Fall term. Credit four hours. M W F 9. Not open to students who have taken Linguistics 201-202. Mr. Gair.

A technical survey of the field of linguistics as a branch of anthropology. This course is one of four introductory courses in the major branches of anthropology; the other three are Anthropology 301, Zoology 370, and Anthropology 303.

302. ELEMENTARY PROBLEMS IN GENERAL LINGUISTICS

Spring term. Credit three hours. Prerequisite, Linguistics 301 or consent of the instructor. Hours to be arranged. Mr. Gair.

303. PRACTICAL PHONETICS

Fall term. Credit two hours. Prerequisite, Linguistics 201 or 301. Hours to be arranged. Mr. Hockett.

331. INDIA AS A LINGUISTIC AREA

Fall term in alternate years. Credit four hours. Prerequisite, Linguistics 202 or 302. Hours to be arranged. Mr. Fairbanks or Mr. Gair or Mr. Kelley.

403-404. ANALYTIC TECHNIQUES

Throughout the year. Credit four hours a term. Prerequisite, Linguistics 201-202 or 301. M W F 10, and an afternoon laboratory hour to be arranged. Mr. Hockett and Staff.

A practical training course in the techniques of observation and analysis of descriptive linguistics.

413. LINGUISTIC DATA PROCESSING

Fall term. Credit two hours. Prerequisite, Linguistics 201 or 301 and consent of the instructor. M 3-5, laboratory hour to be arranged. Mr. Kelley.

A brief survey of general computer design and techniques and elementary training in the FORTRAN language, stressing logical operations and character manipulation. Attention will be given to the computability of linguistic problems, and students will be expected to work up solutions to problems from their own data. Introduction will be made to other computer languages (CODAP, COMIT) as time allows. This course is intended to provide emphasis on aspects of programming and computability of problems of interest to linguists which are not stressed in general, numerically oriented courses.

432. INDO-ARYAN STRUCTURES

Spring term in alternate years. Credit four hours. Prerequisite, Linguistics 201 or 301. Hours to be arranged. Mr. Fairbanks or Mr. Gair or Mr. Kelley.

A synchronic examination of the phonological and grammatical structures of major Indo-Aryan languages. Typological studies in the languages of the family.

436. DRAVIDIAN STRUCTURES

Spring term in alternate years. Credit four hours. Prerequisite, Linguistics 201 or 301. Hours to be arranged. Mr. Kelley.

A synchronic examination of the chronological and grammatical structures of the major languages of the family. Typological studies in Dravidian languages.

[441-442. HISTORY OF THE ROMANCE LANGUAGES

Throughout the year in alternate years. Credit four hours a term. T Th 2-3:30. Mr. Hall. Not offered in 1965-1966.]

443-444. COMPARATIVE ROMANCE LINGUISTICS

Throughout the year in alternate years. Credit four hours a term. T Th 2-3:30. Mr. Hall.

The family of Romance languages; the application of the comparative method and the reconstruction of Proto-Romance speech. The relation between Proto-Romance and Old and Classical Latin.

445. PROBLEMS AND METHODS IN ROMANCE LINGUISTICS

Fall term every third year. Credit four hours. M W F 9. Mr. Hall.

Examination of selected samples of various methodologies in Romance linguistics, with reports and discussion.

446. ROMANCE DIALECTOLOGY

Spring term every third year. Credit four hours. M W F 9. Mr. Hall.

Examination of various types of dialectological description; study of over-all relation among Romance dialects.

449. AREAL TOPICS IN ROMANCE LINGUISTICS

Fall term every third year. Credit four hours. Course may be repeated. Hours to be arranged. Mr. ———

Reading of texts and study of relationships of each area (Dalmatian, Roumanian, Provençal, Sardinian, Catalan).

ETHNOLINGUISTICS AND PSYCHOLINGUISTICS

(See Anthropology 461.)

GREEK DIALECTS

(See Greek 390.)

HISTORY OF THE LATIN LANGUAGE

(See Latin 347.)

COMPARATIVE GRAMMAR OF GREEK AND LATIN

(See Latin 350.)

ITALIC DIALECTS

(See Latin 390.)

COURSES PRIMARILY FOR GRADUATE STUDENTS

[502. COMPARATIVE METHODOLOGY

Spring term in alternate years. Credit four hours. Prerequisite, Linguistics 201-202 or 301. Hours to be arranged. Mr. Fairbanks. Not offered in 1965-66.]

504. HISTORY OF LINGUISTICS

Spring term. Credit four hours. Prerequisite, consent of the instructor. Hours to be arranged.

505. LITERATURE, LANGUAGE, AND CULTURE

Fall term. Credit four hours. Hours to be arranged. Mr. Hall.

A survey of the relation of literature to its linguistic medium and cultural matrix.

506. PIDGIN AND CREOLE LANGUAGES

Spring term. Credit four hours. Hours to be arranged. Mr. Hall.

A survey of the field of pidginized and creolized languages, with discussion of methodological problems, historical relationships, and reading of selected texts.

508. LINGUISTIC TYPOLOGY

Spring term. Credit two or four hours. Prerequisite, Linguistics 404. Hours to be arranged. Mr. Hockett.

511-512. ACOUSTICAL PHONETICS

Throughout the year. Credit four hours a term. Prerequisite, consent of the instructor. Hours to be arranged. Mr. Cowan.

A rapid survey of the techniques of experimental articulatory phonetics; the speech mechanism as a sound generator; sound recording techniques, and the methods of general acoustics; application of acoustical analysis to the study of speech sounds. Requires no mathematical training beyond arithmetical computation; the necessary mathematical operations for acoustical analysis will be developed for the students by the instructor.

513. TRANSFORMATIONAL ANALYSIS

Fall term. Credit four hours. Hours to be arranged.

An introduction to the theory, literature, and practice.

516. LITERACY

Spring term. Credit four hours. Prerequisite, Linguistics 201 or 301. T Th 2-3:15. Mr. Solá.

Discussion of the linguistic, as well as psychological, cultural, and pedagogical aspects of the reading process, with attention to distribution of literacy skills in the world's population; variety of alphabets and other symbol systems in use; sociolinguistic and economic factors contributing to the achievement and maintenance of mass literacy; relationship between verbal and reading skills; relevant basic and applied research in psychology and linguistics.

[521-522. COMPARATIVE INDO-EUROPEAN LINGUISTICS

Throughout the year in alternate years. Credit four hours a term. Prerequisite, consent of the instructor. Hours to be arranged. Mr. Fairbanks. Not offered in 1965-66.]

530. ELEMENTARY PALI

Either term as needed. Credit three hours. Hours to be arranged. Mr. Fairbanks.

531-532. ELEMENTARY SANSKRIT

Throughout the year in alternate years. Credit three hours. Hours to be arranged.

534. COMPARATIVE INDO-ARYAN

Spring term in alternate years. Credit four hours. Prerequisite, Linguistics 202 and 102 or equivalent of an Indo-Aryan language. Hours to be arranged. Mr. Fairbanks. Comparative reconstruction of Proto-Indo-Aryan phonology and grammar.

536. COMPARATIVE DRAVIDIAN

Spring term in alternate years. Credit four hours. Prerequisite, Linguistics 302 and 102 or equivalent of a Dravidian language. Hours to be arranged. Mr. Kelley. Comparative reconstruction of Proto-Dravidian phonology and grammar.

[541-542. COMPARATIVE GERMANIC LINGUISTICS

Throughout the year in alternate years. Credit four hours a term. Prerequisite, consent of the instructor. Hours to be arranged. Mr. Marchand. Not offered in 1965-1966.]

[561-562. COMPARATIVE SLAVIC LINGUISTICS

Throughout the year in alternate years. Credit four hours a term. Prerequisite, consent of the instructor. Hours to be arranged. Mr. Whitman. Not offered in 1965-66.]

571-572. SEMINAR IN SOUTHEAST ASIAN LINGUISTICS

Throughout the year. Credit four hours a term. Prerequisites, Linguistics 201-202 or 301 and consent of the instructor. Hours to be arranged. Mr. Jones.

Descriptive and comparative studies of mainland Southeast Asian languages are dealt with in alternate terms. Topics may be selected in accordance with the interests of the students.

[573. MALAYO-POLYNESIAN LINGUISTICS

Either term. Credit four hours. Prerequisites, Linguistics 201-202 or 301 and consent of the instructor. Hours to be arranged. Mr. Wolff. Not offered in 1965-1966.]

581-582. SINO-TIBETAN LINGUISTICS

Throughout the year. Credit four hours a term. Prerequisite, Linguistics 201-202 or 301 or Chinese 402-403 and consent of the instructor. Hours to be arranged. Mr. Bodman.

Descriptive and comparative studies of Chinese dialects and Tibeto-Burman languages.

600. SEMINAR

Each term. Admission by permission of the instructor. Hours and credits to be arranged. Various members of the Staff.

Subject to the needs of students and to the limitations of staff time, advanced seminars are set up in a wide variety of topics, which, in the past, have included such as the following: contemporary grammatical theory, applied linguistics in language teaching, applied linguistics in literacy training and orthography formation, English grammar, problems and methods of Romance linguistics, Romance linguistic geography, Old Provençal texts, Old Italian texts, problems of Romance genealogy, Romance-based Creoles, German dialects, and field methods in phonology.

615-616. DIRECTED RESEARCH

Portuguese

Messrs. F. B. Agard, C. L. Eastlack, and Staff.

101-102. ELEMENTARY COURSE

Throughout the year. Credit six hours a term. Hours to be arranged.

203-204. COMPOSITION AND CONVERSATION

Throughout the year. Credit three hours a term. Prerequisite for 203, Qualification in Portuguese; for 204, Portuguese 203 or consent of the instructor. Hours to be arranged.

Quechua

D. F. Solá.

221-222. ELEMENTARY COURSE

Throughout the year. Credit three hours a term. Prerequisite, satisfaction of the language requirement in Spanish and consent of the instructor. Hours to be arranged.

A basic course in the Cuzco dialect of Quechua, emphasizing auditory comprehension and verbal control.

600. SEMINAR IN QUECHUA LINGUISTICS

Either term. Admission by permission of the instructor. Hours and credits to be arranged. Mr. Solá.

Russian

Miss Patricia Carden, Messrs. G. H. Fairbanks, G. Gibian, M. Horwitz, Mrs. Augusta L. Jaryc, Messrs. R. L. Leed, R. H. Whitman, and Staff.

Russian majors study Russian language, literature, and linguistics, with emphasis placed in accordance with their specific interests.

It is desirable, although not necessary, for a prospective major to complete Russian 101-102, 201-202, and 203-204 as an underclassman, since these courses are prerequisite to most of the upperclass courses which count toward

the major. A student may be admitted to the major upon satisfactory completion of Russian 102 or the equivalent.

Students who elect to major in Russian should consult with Mr. Gibian and Mr. Leed as soon as possible.

Students taking Honors in Russian undertake individual reading and research, write an Honors essay, and take a comprehensive examination at the end of the senior year.

For a major in Russian a student will be required to complete: (1) Russian 303-304; (2) twenty-four hours from 300- and 400-level literature and linguistics courses of which twelve hours must be in literature in the original.

Prospective teachers of Russian in secondary schools should take Linguistics 201 as underclassmen, followed by Russian 403-404.

For Distribution II for non-majors the following sequences are recommended: Russian 201-202, 331-332 or 334; Russian 203-204, 303-304.

Of the courses listed below, those dealing with literature are staffed and administered by the Department of Russian Literature, and inquiries in regard to them ought to be addressed to that Department (191 Goldwin Smith).

The courses dealing with language and linguistics are offered by the Division of Modern Languages, and administered by that Division (133 Morrill Hall).

101. ELEMENTARY COURSE

Either term. Credit six hours. Fall term: drill, daily at 8, 9, 10, 11, or 12; lecture, M W 2 or T Th 11 or 2. Spring term: drill, daily at 8 or 11; lecture, M W 9.

102. ELEMENTARY COURSE

Either term. Credit six hours. Prerequisite, Russian 101 or its equivalent. Fall term: drill, daily at 8 or 11; lecture, M W 10. Spring term: drill, daily at 8, 9, 10, or 12; lecture, M W 2 or T Th 11 or 2.

112. ELEMENTARY COURSE

Either term. Credit three hours. Prequalification course for students entering above the level of placement in Russian 102. Hours to be arranged.

151. ELEMENTARY GRADUATE READING COURSE

Either term. Credit three hours. Open only to graduate students. M W F 4:30.

Designed to help students prepare for the graduate reading examination administered by the Graduate School.

152. ELEMENTARY GRADUATE READING COURSE

Either term. Credit three hours. Open only to graduate students. Prerequisite, Russian 151 or consent of the instructor. M W F 4:30.

Designed to help students prepare for the graduate reading examination administered by the Graduate School.

201. RUSSIAN READING

Either term. Credit three hours. Prerequisite, Qualification in Russian (for definition of Qualification see page 00). Students who have passed Courses 102 or 112 but

failed Qualification may be admitted on consent of Mr. Leed. Fall term: M W F 10 or T Th S 10. Spring term: T Th S 11.

202. RUSSIAN READING

Either term. Credit three hours. Prerequisite, Russian 201. Fall term: M W F 9. Spring term: M W F 10 or T Th S 10.

203. COMPOSITION AND CONVERSATION

Fall term. Credit three hours. Prerequisite, Qualification in Russian (for definition of Qualification see page 00.) Students who have passed Courses 102 or 112 but failed Qualification may be admitted on consent of Mr. Leed. M W F 11, 12 or 2 plus an additional hour at M 3 or T 3.

204. COMPOSITION AND CONVERSATION

Spring term. Credit three hours. Prerequisite, Russian 203. M W F 11, 12, or 2 plus an additional hour at M 3 or T 3.

MASTERPIECES OF RUSSIAN LITERATURE

In translation. Throughout the year. Credit three hours a term. M W F 12. Miss Carden. (See Comparative Literature 221-222.)

292. SUPERVISED READING IN RUSSIAN LITERATURE

Either term. Variable credit. By invitation of the Department.

301-302. ELEMENTARY RUSSIAN FOR UPPERCLASSMEN

Throughout the year. Credit four hours a term. Prerequisite, satisfaction of language requirement for graduation and consent of the instructor. T Th S 9. Mr. Leed.

Designed to impart a sound knowledge of the language for students who need it as a tool for research or who plan to go on to graduate school.

303. ADVANCED COMPOSITION AND CONVERSATION

Fall term. Credit four hours. Prerequisite, Russian 204. M W F 10 or 3. Mrs. Jaryc.

304. ADVANCED COMPOSITION AND CONVERSATION

Spring term. Credit four hours. Prerequisite, Russian 303. M W F 10 or 3. Mrs. Jaryc.

305-306. ADVANCED READINGS

Throughout the year. Credit four hours a term. Prerequisite, Russian 202. Hours to be arranged. Mrs. Jaryc.

Designed for students needing further practice in reading Russian that is not literary.

THE RUSSIAN NOVEL

In translation. Fall term. Credit four hours. T Th S 9. (See Comparative Literature 311.)

Turgenev, Tolstoy, Dostoevsky.

SOVIET LITERATURE

In translation. Spring term. Credit four hours. M W F 10. Mr. Horwitz. (See Comparative Literature 312.)

314. INTELLECTUAL TRENDS IN NINETEENTH-CENTURY RUSSIA

Spring term. Credit four hours. M W F 2. Miss Carden.

Emphasis on intellectual figures and literary criticism. Gogol and Tolstoy as publicists, reporters. Belinsky, Dobrolyubov, Chernyshevsky, Apollon Grigoriev, Annenkov, Aksakov, Kozma Prutkov, Rozanov. Dostoevsky as journalist. Literary groups and magazines. Most of the reading will be in English, but reading knowledge of Russian is strongly recommended.

331. RUSSIAN POETRY

Fall term. Credit four hours. Prerequisites, Russian 202 and consent of the instructor. T Th 3 and one hour to be arranged.

[332. RUSSIAN DRAMA

Credit four hours. Prerequisite, Russian 202 and consent of the instructor. Not offered in 1965-1966.]

334. THE RUSSIAN SHORT STORY

Spring term. Credit four hours. T Th 3 and one hour to be arranged. Prerequisite, Russian 202 and consent of the instructor. Miss Carden.

Pushkin, Turgenev, Chekhov, and others.

[401-402. HISTORY OF THE RUSSIAN LANGUAGE

Throughout the year in alternate years. Credit four hours a term. Prerequisites, qualification in Russian and Linguistics 201-202. M W F 2. Mr. Leed. Not offered in 1965-1966.]

403. LINGUISTIC STRUCTURE OF RUSSIAN

Fall term in alternate years. Credit four hours. Prerequisite, qualification in Russian and Linguistics 201 or 301. M W F 2. Mr. Leed.

A descriptive study and analysis of Russian linguistic structure. Russian phonetics, phonemics, morphology, and syntax.

404. RUSSIAN FOR TEACHERS

Spring term in alternate years. Credit four hours. Prerequisites, Qualification in Russian, Linguistics 201 or 301, and Russian 403. M W F 2. Mr. Leed.

Methods of teaching the language based on a contrastive study of the structures of English and Russian. Extensive outside reading, reports on textbooks, discussion of various teaching aids and realia. Required for provisional New York State teacher certification.

421. SUPERVISED READING AND RESEARCH

Either term. Variable credit. By permission of the department.

[431. RUSSIAN PROSE FICTION

Fall term. Credit four hours. Prerequisites, Russian 332 or 334 or the equivalent, and consent of the instructor. T Th 2 and one hour to be arranged. Miss Carden.
Longer works by Tolstoy, Dostoevsky, and others. Not offered in 1965-1966.]

432. PUSHKIN

Spring term. Credit four hours. Prerequisite, consent of the instructor. T Th 2, and one hour to be arranged. Mr. Gibian.

435. GOGOL

Fall term. Credit four hours. Prerequisites, Russian 332 or 334 or the equivalent, and consent of the instructor. M W F 10. Mr. Horwitz.

Careful study of Gogol's literary works and his *Selections from Correspondence with Friends*; some treatment of the development of Russian prose of his time. Will not be offered in 1966-1967.

493. HONORS ESSAY TUTORIAL

Either term. Credit four hours.

COURSES PRIMARILY FOR GRADUATE STUDENTS

501. OLD BULGARIAN

Fall term in alternate years. Credit four hours. Hours to be arranged. Mr. Whitman.

502. OLD RUSSIAN

Spring term in alternate years. Credit four hours. Hours to be arranged. Mr. Leed.

517-518. RUSSIAN STYLISTICS

Throughout the year. Credit four hours a term. Hours to be arranged.

Literary uses of the Russian language. Close examination of texts from various periods and genres. Practical exercises.

[520. STUDIES IN RUSSIAN POETRY

Spring term. Credit four hours. Hours to be arranged.

Topic varies from year to year. Class conducted in Russian. Not offered in 1965-66.]

521. RUSSIAN LITERATURE FROM THE BEGINNINGS TO 1700

Fall term. Credit four hours. Reading knowledge of Russian required. M W F 2. Mr. Whitman.

Old Russian literature, with attention to the development of the Russian literary language.

522. EIGHTEENTH-CENTURY LITERATURE

Spring term. Credit four hours. Prerequisite, Russian 521 or consent of the instructor. M W F 2. Mr. Whitman.

[531. PROSE WRITERS, 1890-1917

Fall term. Credit four hours. M W F 3. Mr. Horwitz. Not offered in 1965-66.]

[534. STUDIES IN THE PROSE OF ANDREY BELY

Spring term. Credit four hours. M W F 3. Mr. Horwitz. Not offered in 1965-1966.]

GRADUATE SEMINARS

COMPARATIVE SLAVIC LINGUISTICS

(See Linguistics 561-562.)

600. SEMINAR IN SLAVIC LINGUISTICS

Offered in accordance with student needs. Credit four hours. Hours to be arranged. Mr. Henne or Mr. Leed.

601. INTRODUCTION TO GRADUATE STUDY

Fall term. Credit four hours. Hours to be arranged. Staff.

Required of all first-year graduate students. Bibliography, methods of literary analysis, stylistics, topics in scholarship.

611. SEMINAR IN RUSSIAN DIALECT GEOGRAPHY

Fall term. Credit four hours. Prerequisite, consent of the instructor. Hours to be arranged. Mr. Leed.

Study of the principal divisions of Russian dialects, the history of their development, their synchronic relationship, and the analysis of phonological, grammatical and lexical isoglosses. Practical work in transcribing. Relationship of regional dialects to the standard language. Interpretation of the Russian Dialect Atlas.

671. SEMINAR IN TWENTIETH-CENTURY RUSSIAN LITERATURE

Fall term. Credit four hours. Th 4-6. Topic varies from year to year. Topic for 1964-1965: Prose in the 1920's. May be taken repeatedly. Miss Carden.

672. SEMINAR IN NINETEENTH-CENTURY RUSSIAN LITERATURE

Spring term. Credit four hours. Th 4-6. Topic varies from year to year. Topic to be announced. May be taken repeatedly. Mr. Gibian.

Serbo-Croatian

Mr. R. L. Leed.

221-222. ELEMENTARY COURSE

Throughout the year. Offered according to demand. Credit three hours a term. Prerequisite, Qualification in Russian and consent of the instructor. Hours to be arranged. Mr. Leed.

Sinhalese

Messrs. G. H. Fairbanks, J. W. Gair, and Staff.

101-102. ELEMENTARY COURSE

Throughout the year. Credit six hours a term. Hours to be arranged.

See also Linguistics 331, 432, 521, 522, 530, 531, 532, 534.

Spanish

Messrs. F. B. Agard, C. Bandera, J. S. Bernstein, D. Brenes, Mrs. Christina Figuerola, Messrs. M. D. Saltarelli, K. L. Selig, D. F. Solá and Staff.

The Spanish major is designed to give the student oral control of the language, adequate proficiency in its written expression, and a creditable knowledge of the literature and culture of Spain and Spanish America.

Satisfactory completion of the major should enable the student to meet language requirements for a provisional teaching certificate, to do graduate work in Spanish, or to satisfy government standards for acceptance into training programs of the State Department and other agencies.

For a major in Spanish the following are to be completed: (1) prerequisites: Spanish 201 and Spanish 204 or its equivalent; (2) acceptance by Mr. Brenes and Mr. Solá; (3) major courses: Spanish 303-304, 311-312, 403; (4) six additional courses to be taken from the following: Spanish 353-354, 401-402, 412, 421, 422, 423, 425-426, 427, 428, 461-462, 464, 467-468.

The Distribution I requirement in the Humanities is satisfied in Spanish by any two of the following courses: Spanish 201, 311, 312; but no course may be counted if it is used in fulfillment of the language requirement.

101. ELEMENTARY COURSE

Either term. Credit six hours. Fall term: drill, daily at 8, 9, or 12; lectures, M W 2 or T Th 3. Spring term: drill, daily at 8 or 9; lectures, W F 12.

102. ELEMENTARY COURSE

Either term. Credit six hours. Prerequisite, Spanish 101 or its equivalent. Students who have previously studied Spanish should consult page 00 before registering for this course. Fall term: drill, daily at 8, 9; lectures, W F 12. Spring term: drill, daily at 9, 10, or 12; lecture, M W 3 or T Th 10.

112. ELEMENTARY COURSE

Either term. Credit three hours. Prequalification course for students entering above the level of placement in Spanish 102. Fall term: drill, M W F 8, 10, or 12; T Th S 11; lecture, F 9. Spring term: drill, M W F 9, 10, or 12; lecture, F 11.

201. INTRODUCTION TO HISPANIC LITERATURE

Both terms. Credit three hours. Prerequisite, Qualification in Spanish. (For definition of Qualification see page 13.) M W F 8 or T Th S 9. Staff.

An intermediate reading course in which texts of established literary quality are read. The purpose is twofold: to develop reading and speaking facility through acquisition of vocabulary and idiom, and to develop methods and habits of critical appreciation of a foreign literature. Class discussion is conducted mainly in Spanish.

203. INTERMEDIATE COMPOSITION AND CONVERSATION

Either term. Credit three hours. Prerequisite, Qualification in Spanish (for definition of Qualification see page 13.) Students who have passed Courses 102 or 112 but failed Qualification may be admitted on consent of Mr. Saltarelli. Fall term: M-F 9, 10, 11, or 2. Spring term: M-F 11, 12, or 2.

Guided conversation, grammar review, and oral and written composition. Emphasis is on increasing the student's oral and written command of Spanish.

204. INTERMEDIATE COMPOSITION AND CONVERSATION

Either term. Credit three hours. Prerequisite, Spanish 203. Fall term: M-F 9 or 3. Spring term: M-F 9, 10, or 3.

The study of advanced grammar. Exercises designed to improve the student's ability to speak, read, and write Spanish.

221-222. ELEMENTARY COURSE

Throughout the year. Credit three hours a term. Prerequisites, satisfaction of the language requirement in a Romance language or Latin and consent of the instructor. M W F 2.

303. ADVANCED COMPOSITION AND CONVERSATION

Fall term. Credit four hours. Prerequisite, Spanish 204. M-F 11.

The study of fundamental aspects of style in standard spoken Spanish; advanced problems in comparative usage in English and Spanish. Frequent oral and written reports in Spanish are required. Cultural content is oriented to Spain.

304. ADVANCED COMPOSITION AND CONVERSATION

Spring term. Credit four hours. Prerequisite, Spanish 303. M-F 11.

Extensive reading in current Spanish language publications. The study of fundamental aspects of style in standard written Spanish. Cultural content is oriented to Spanish America.

311-312. MASTERPIECES OF HISPANIC LITERATURE

Throughout the year. Credit four hours a term. Prerequisite, Spanish 201, four years entrance Spanish, or consent of the instructor. May be entered the second term. M W F 11. Fall, Mr. Brenes. Spring, Mr. Bandera.

Reading and discussion of representative works of Spanish and Spanish-American literature. Works chosen are read in their entirety. Most of the first-semester material is from Golden Age and colonial authors. Second semester deals with the nineteenth and twentieth centuries. Class conducted in Spanish.

353-354. THE SPANISH NOVEL

Throughout the year. Credit four hours a term. Prerequisite, Spanish 311 or 312 or consent of the instructor. May be entered in the second term. M W F 9. Mr. Bandera.

Reading and discussion of significant novels of Spain. Fall term: romanticism,

costumbrismo, naturalism. Spring term: from the generation of '98 to the present. Class conducted in Spanish.

[401-402. HISTORY OF THE SPANISH LANGUAGE

Throughout the year in alternate years. Credit four hours a term. Prerequisites, qualification in Spanish and Linguistics 201 or 301. M W F 2. Mr. Agard. Not offered in 1965-1966.]

403. THE GRAMMATICAL STRUCTURE OF SPANISH

Fall term. Credit four hours. Prerequisites, Qualification in Spanish and Linguistics 201 or 301. M W F 2. Mr. Solá.

Descriptive analysis of the morphological and syntactical structure of present-day standard Spanish.

404. SPANISH FOR TEACHERS

Spring term. Credit four hours. Prerequisites, Qualification in Spanish and Linguistics 201 or 301. M W F 2. Mr. Solá.

A course in methodology and applied linguistics for prospective teachers of the Spanish language. A survey of current attitudes, methods, materials, and techniques. The application of descriptive linguistics to the organization of lesson material, illustrated mainly through the contrastive study of Spanish and English phonology. Required for provisional New York State teacher certification.

THE COMPARATIVE STUDY OF THE ROMANCE LANGUAGES

(See Linguistics 441-442, 443-444, 445, 446, 449.)

412. MEDIEVAL NON-EPIC WORKS

Spring term. Credit four hours. Prerequisite, a Spanish 300-level literature course or consent of the instructor. M W F 3. Mr. Selig.

A study of selected poetry and prose of the Middle Ages, Juan Ruiz, Lopez de Ayala, Baena, the chronicles, and didactic writers.

413. THE EPIC

Fall term. Credit four hours. Prerequisite, a Spanish 300-level literature course or consent of the instructor. M W F 3. Mr. Bandera.

Intensive study of medieval epic. The *Cid* and *Fernan Gonzalez*.

423. THE PICARESQUE NOVEL

Fall term. Credit four hours. Prerequisite, a Spanish 300-level literature course, or consent of the instructor. Hours to be arranged. First class meeting in Goldwin Smith 278, the first day of instruction, at 4:30 p.m. Mr. Selig.

A study of the development and degeneration of the picaresque novel in the seventeenth century in Spain. Lectures and discussion in Spanish.

427. TWENTIETH-CENTURY LATIN AMERICAN NOVEL

Fall term. Credit four hours. Prerequisite, a Spanish 300-level literature course or consent of the instructor. Hours to be arranged. First class meeting in 283 Goldwin Smith at 4:30 p.m. on the first day of instruction. Mr. Bernstein.

An intensive study of selected novels representing the main tendencies with special attention given to the *indianista* movement and the novel of the revolution.

428. THE LATIN-AMERICAN SHORT STORY

Spring term. Credit four hours. Prerequisite, a Spanish 300-level literature course or consent of the instructor. Hours to be arranged. First class meeting in 283 Goldwin Smith at 4:00 p.m. on the first day of instruction. Mr. Bernstein.

A study of selected short story writers from Palma to the contemporaries and their relationship to European and North American authors.

433. GAUCHO LITERATURE

Fall term. Credit four hours. Prerequisite, a 300-level Spanish literature course. Hours to be arranged. First meeting in 277 Goldwin Smith, 4:30 p.m. the first day of instruction. Mr. Bernstein.

A study of the *gaucho* novel and poetry from Estanislao del Campo to the contemporaries.

[461-462. REALISM: DRAMA AND THE NOVEL

Not offered in 1965-1966.]

[463. THE HISPANIC DRAMA

Not offered in 1965-1966.]

464. HISPANIC POETRY

Spring term. Credit four hours. Prerequisite, a Spanish literature course at the 300-level or consent of instructor. M W F 2. Mr. Selig.

An intensive study of selected poets of Spain and Spanish America from *modernismo* to the present.

465-466. UNDERGRADUATE SEMINAR IN SPANISH LITERATURE

Throughout the year. May be entered in the second term. Credit four hours a term. Prerequisite, Spanish 311 or 312 and consent of the instructor. Open to qualified non-majors. Hours to be arranged. Fall, Mr. Brenes. Spring, Mr. Bernstein.

Topic to be announced.

467-468. HONORS WORK IN HISPANIC LITERATURE

Throughout the year. May be entered in the second term. Credit four hours a term. Prerequisite, consent of the instructor. Hours to be arranged. Staff.

517-518. GRADUATE SEMINAR IN HISPANIC LITERATURE

Throughout the year. May be entered in the second term. Credit four hours a term. Hours to be arranged. Mr. Selig.

Topic to be announced.

571-572. INTRODUCTION TO LITERARY STUDIES

Throughout the year. Credit two hours a term. Required of all first-year graduate students in Romance Studies. W 4-6. Staff.

600. SEMINAR IN IBERO-ROMANCE LINGUISTICS

Offered in accordance with student needs. Credit four hours. Hours to be arranged. Mr. Agard or Mr. Solá.

Tagalog

Mr. J. U. Wolff and Staff.

101-102. ELEMENTARY COURSE

Throughout the year. Credit six hours a term. Prerequisite, consent of the instructor. Hours to be arranged. Offered according to demand.

Telugu

Mr. G. B. Kelley and Staff.

101-102. ELEMENTARY COURSE

Throughout the year. Credit six hours a term. Hours to be arranged.

201. TELUGU READING

Either term. Credit three hours. Prerequisite, Qualification in Telugu. Hours to be arranged.

(See also Linguistics 331, 436, 536.)

Thai

Mr. R. B. Jones, Jr., and Staff.

101-102. ELEMENTARY COURSE

Throughout the year. Credit six hours a term. Hours to be arranged.

201-202. THAI READING

Throughout the year. Credit three hours a term. Prerequisite for 201, Qualification in Thai; for 202, Thai 201 or consent of the instructor. Hours to be arranged. Mr. Jones.

203-204. COMPOSITION AND CONVERSATION

Throughout the year. Credit three hours a term. Prerequisite for 203, Qualification in Thai; for 204, Thai 203 or consent of the instructor. Hours to be arranged. Mr. Jones.

301-302. ADVANCED THAI

Throughout the year. Credit for hours a term. Prerequisite, Thai 201-202 or the equivalent. Hours to be arranged. Mr. Jones.

Selected readings in Thai writings in various fields.

305-306. THAI LITERATURE

Throughout the year. Credit four hours a term. Prerequisite, Thai 301-302 or consent of the instructor. Hours to be arranged. Mr. Jones.

Reading of some of the significant novels, short stories, and letters written since 1850.

Urdu

Mr. G. H. Fairbanks and Staff.

101-102. ELEMENTARY COURSE

Throughout the year. Credit six hours a term. Drill, daily at 9. Lecture, T Th 10.

(See also Linguistics 331, 432, 521, 522, 530, 531, 532, 534.)

Vietnamese

Mr. R. B. Jones, Jr., and Staff.

101-102. ELEMENTARY COURSE

Throughout the year. Credit six hours a term. Hours to be arranged.

201-202. VIETNAMESE READING

Throughout the year. Credit three hours a term. Prerequisite for 201, Qualification in Vietnamese; for 202, Vietnamese 201 or consent of the instructor. Hours to be arranged. Mr. Jones.

203-204. COMPOSITION AND CONVERSATION

Throughout the year. Credit three hours a term. Prerequisite for 203, Qualification in Vietnamese; for 204, Vietnamese 203 or consent of the instructor. Hours to be arranged. Mr. Jones.

301-302. ADVANCED VIETNAMESE

Throughout the year. Credit four hours a term. Prerequisite, Vietnamese 201-202 or consent of the instructor. Hours to be arranged. Mr. Jones.

Selected readings in Vietnamese writings in various fields.

MUSIC

Mr. W. A. Campbell, Chairman; Messrs. W. W. Austin, D. Bartha, D. J. Grout, W. C. Holmes, J. T. H. Hsu, K. Husa, J. Kirkpatrick, C. Mandernach, D. Montagu, R. M. Palmer, D. R. M. Paterson, H. E. Samuel, T. A. Sokol, Miss Barbara Troxell.

Freshmen considering music as a possible major or minor field should register for Music 151-152, and should consult the chairman of the Department as early as possible, to make tentative plans for a comprehensive program in accordance with their abilities and previous musical training. The sophomore year is not too late for a decision, provided that during that year the student is enrolled in the appropriate courses. The Distribution I requirements should be completed by the end of the sophomore year.

Prerequisites for admission to the major are: Music 151-152, with a grade above 75 in each part of the final examination (including sight singing and

keyboard playing); Music 282; Music 321-322; and participation in one of the musical organizations or ensembles (Music 331 through 338 and 441 through 444).

Required courses for the A.B. with major in music are: Music 351-352; 381-382; 451; 481; a second year of individual instruction in performance and of participation in a musical organization or ensemble; a course in conducting and score-reading (Music 461-462 or 463-464); and one of the following: 452, 482, or 490.

Candidates for Honors in music will be designated by the Department at the beginning of the second term of their junior year. Honors candidates will take Music 401-402 in addition to the courses regularly required for a major. Each candidate will submit an Honors thesis or a composition not later than April 25 of his senior year and will be required to pass a general examination in the theory and history of music not later than May 25 of his senior year.

The Distribution I requirement in the Expressive Arts is satisfied in music by Music 211-212, 213-214, 215-216, or 151-152.

The following courses may be offered toward the satisfaction of Distribution II requirements: Music 213-214, 215-216, 151-152 (if not used for Distribution I), and 313-314, 321-322.

A large collection of recorded music and scores is housed in the Department of Music, where a number of phonograph listening rooms are available. These facilities may be used by any member of the student body at hours to be announced each term.

Choral and instrumental ensembles are trained and directed by members of the departmental staff each term, and all students who are interested are invited to join one or more of these groups. These ensembles include the Sage Chapel Choir, the Cornell Chorus, the Cornell University Glee Club, the Bands (Concert Band, Big Red Band, Repertoire Band, Brass Ensembles), the Cornell Symphony Orchestra, the Cornell Chamber Orchestra, and Chamber Music groups. For rehearsal hours and conditions for academic credit, see Music 331 through 338 and 441 through 444. Announcements of tryouts for all organizations will be made at the beginning of the fall term.

Music Theory

151-152. THEORY I

Throughout the year. Credit three hours a term. A knowledge of the rudiments of music and some ability to play an instrument are required for admission. First term prerequisite to second. M-F 9. Mr. Hsu.

Designed for music majors and other qualified students. An integrated theory course, prerequisite for all advanced courses in music. Study of the fundamental elements of music: rhythm, intervals, scales, triads; harmony, elementary counterpoint, and introduction to composition in instrumental style. Drill in aural discrimination, sight singing, keyboard harmony, sight reading; melodic, harmonic, and contrapuntal dictation; and score reading.

215-216. BASIC TECHNIQUES OF MUSIC

Throughout the year. Music 215 repeated in spring term. Credit three hours a term. Ability to sing on pitch is required for admission; some ability to play an instrument

is desirable. First term prerequisite to second. M-F 9 or 10. Messrs Campbell, Mandernach, and Montagu. Music 215, spring term: M-F 10. Mr. Mandernach. This course may not be counted toward the requirements for the major in music.

Study of the fundamental techniques of music. Includes rhythmic, melodic, and harmonic dictation; sight singing; writing of melody and simple four-part harmony; keyboard harmony; and listening to recorded masterpieces. Second term includes introduction to analysis and simple contrapuntal writing for voices and instruments.

351-352. THEORY II

Throughout the year. Credit four hours a term. Prerequisite, Music 152 or equivalent. First term prerequisite to second. M W F 10 and T Th 3. Messrs. Palmer and Paterson.

Includes advanced harmony and intermediate counterpoint and analysis. A continuation of Music 151-152, with more advanced drill in the areas specified in the description of that course. Special emphasis on the study of chromatic harmony and contrapuntal writing in two and three voices. There will be analysis of melody and harmony and of some of the fundamental homophonic and contrapuntal forms.

[451. ADVANCED COUNTERPOINT AND ANALYSIS: EIGHTEENTH CENTURY

Fall term. Credit four hours. Prerequisite, Music 352 or equivalent. Mr. Palmer. Not offered in 1965-1966.]

[452. COMPOSITION (PROSEMINAR)

Spring term. Credit four hours. Prerequisite, Music 352 or equivalent. May be repeated for credit. Mr. Husa. Not offered in 1965-1966; will be offered in 1966-1967.]

453. ADVANCED COUNTERPOINT AND ANALYSIS: SIXTEENTH CENTURY

Fall term. Credit four hours. Prerequisite, Music 352 or equivalent. M W 12 and Th 2. Mr. Palmer.

Contrapuntal techniques of the sixteenth century, including the analysis of works by Palestrina and his contemporaries.

[455. ORCHESTRATION

Fall term. Credit four hours. Prerequisite, Music 352. Mr. Husa. Not offered in 1965-1966; will be offered in 1966-1967.]

461-462. ORCHESTRAL CONDUCTING AND SCORE READING

Throughout the year. Credit two hours a term. Prerequisite, Music 352. First term prerequisite to second. M W 11. Mr. Husa.

The fundamentals of score reading and conducting technique. Study of orchestral scores from baroque, classical, romantic, and contemporary periods. Students will occasionally conduct a small group. Opportunity will also be given to those who qualify to conduct the University Orchestras.

[463-464. CHORAL CONDUCTING AND SCORE READING

Throughout the year. Credit two hours a term. Prerequisite, Music 352. First term prerequisite to second. Mr. Sokol. Not offered in 1965-1966; will be offered in 1966-1967.]

Music History

211-212. BEETHOVEN

Throughout the year. Credit three hours a term. Open to sophomores and upperclassmen. May be entered either term. M W (F) 12 and discussion sections to be arranged. Messrs. Austin, Bartha, and Staff.

Studies of the nine symphonies, the piano sonatas, and selected other works, designed especially for students whose interest in concert music is only beginning to develop.

213-214. THE ART OF MUSIC

Throughout the year. Credit three hours a term. Open to sophomores and upperclassmen who are acquainted with concert music enough to sing or whistle a recognizable theme. First term, or consent of instructor, prerequisite to second. T Th 11 and one discussion section to be arranged. Concerts at 3:00 p.m. on October 17 and at 8:15 p.m. on Jan. 4, Jan. 18, and Feb. 15. Mr. Austin and Assistants.

Studies to foster the growth of rational enjoyment of the art of music. First term: the elements and instruments of music and musical forms, as exemplified in music of various epochs and nations, and various degrees of complexity. Second term: the work of representative composers in relation to their social and artistic environment, with emphasis on Mozart's *Don Giovanni* and Stravinsky's *Raké's Progress*.

282. INTRODUCTION TO MUSICAL STYLE AND ANALYSIS

Spring term. Credit three hours. Prerequisite, Music 152 or equivalent. M W F 11. Mr. Austin.

A study of the interplay of idiom and structure in various styles through analysis of typical masterpieces.

[313. MASTERPIECES OF MUSIC

Fall term. Credit four hours. Prerequisite, consent of instructor. Mr. Grout. Not offered in 1965-1966. In 1966-1967 the topic will be "Opera in the Twentieth Century."]

[314. THE GREAT TRADITION IN MUSIC

Spring term. Credit four hours. Prerequisite, consent of instructor. Mr. Grout. Not offered in 1966. In 1967 the topic will be "Bach's Mass in B Minor."]

381-382. HISTORY OF MUSIC I

Throughout the year. Credit four hours a term. Prerequisite, Music 282. First term prerequisite to second. M 2-4, W 2-3. Mr. Holmes.

History of musical styles from the Middle Ages to the present. Readings from theoretical sources (in translation) and written reports.

481. HISTORY OF MUSIC

Fall term. Credit four hours. Prerequisite, Music 382. M 2-4 and individual conferences to be arranged. Messrs. Bartha and Holmes.

Intensive study of selected topics, with analyses, collateral reading, and written reports.

482. MUSICOLOGY (PROSEMINAR)

Spring term. Credit four hours. Prerequisite, Music 481. M 2-4. Messrs. Bartha and Holmes.

Principles of research. Introduction to notation, with exercises in transcription from sources and preparation of performing editions.

Honors

401-402. HONORS WORK IN MUSIC

Credit four hours a term. Open only to Honors candidates in their senior year. Mr. Austin and members of the Department.

Musical Performance

321-322. INDIVIDUAL INSTRUCTION IN VOICE, ORGAN, PIANO; STRING, WOODWIND, AND BRASS INSTRUMENTS

Throughout the year. For credit, see below. Consent of instructor required.

Basic fee for one half-hour lesson weekly during one term (carrying no credit), \$60. Fees for a practice schedule of six hours weekly during one term: \$40 for the use of a pipe organ in Barnes Hall or Bailey Hall; \$10 for a practice room with piano; \$5 for a practice room without piano.

For credit: one hour lesson weekly (or two half-hours) and a double practice schedule carry three hours of credit for two terms, provided that the student has earned or is earning at least an equal amount of credit in courses in music history or music theory. (Students should register in Music 321-322 for one hour's credit the first term and two hours' credit the second term.) The basic fees involved are then multiplied by one and a half (lesson fee \$90; practice fee \$60, \$15, and \$7.50). A student may register for this course in successive years.

The Department of Music offers a limited number of scholarships in applied music. For information inquire at the Department office.

490. SUPPLEMENTARY STUDIES IN PERFORMANCE AND PEDAGOGY

Spring term. Credit hours to be arranged. Consent of instructor required. Mr. Campbell and Staff.

Musical Organizations and Ensembles

Throughout the year. Credit one hour a term. Consent of instructor required; admission by audition only. Registration is permitted in two of these courses simultaneously, and students may register in successive years, but no student may earn more than six hours of credit in these courses. Membership in these and other musical organizations is also open to students without credit, if desired.

331-332. SAGE CHAPEL CHOIR

Th 7:15-9 p.m., Sun. 9:30 a.m. Mr. Sokol.

335-336. CORNELL ORCHESTRAS

Rehearsals for the Cornell Symphony Orchestra: W 7:30-10 p.m., full orchestra; alternate T or Th 7:30-10 p.m., sectional rehearsals. Rehearsals for the Cornell Chamber Orchestra: M 7:30-10 p.m. (Limited to more experienced players.) Mr. Husa.

337-338. UNIVERSITY CONCERT BANDS

M 4:30-6 p.m., W 7-9 p.m. or T 4:30-6 p.m., Th 7-9 p.m. and additional hours to be arranged. Messrs. Campbell and Mandernach.

441-442. CHAMBER MUSIC ENSEMBLE

Hours to be arranged. Messrs. Montagu and Hsu.

443-444. PRECLASSICAL CHAMBER MUSIC ENSEMBLE (SINGERS AND INSTRUMENTALISTS)

M 3-4:30. Messrs. Sokol and Hsu.

Study and performance of selected music from the Middle Ages to 1750.

Courses Primarily for Graduates

551-552. SEMINAR IN COMPOSITION

Throughout the year. Credit four hours a term. Open to seniors by permission. W 2-4. Mr. Palmer.

Intended to make the student acquainted with compositional practices in contemporary styles and to develop his creative abilities.

555. ANALYSIS (PROSEMINAR)

Fall term. Credit four hours. Prerequisite, Music 352 or equivalent. Required of all graduate students in composition. T 9-11, Th 9. Mr. Palmer.

An introduction to the systematic analysis of musical structure, melody and harmony. Emphasis on the Viennese classic composers and Bach, with some consideration of later music.

580. CONTEMPORARY MUSIC (SEMINAR)

Spring term. Credit four hours. Prerequisite, Music 352 or equivalent. Required of all graduate students in composition during each year of residence. T 9-11. Mr. Palmer.

Detailed analysis of a limited number of works representative of the main trends in twentieth-century music. Material covered will vary from year to year.

581-582. INTRODUCTION TO BIBLIOGRAPHY AND RESEARCH

Throughout the year. Credit four hours a term. Prerequisites, a reading knowledge of French and German and an elementary knowledge of music theory and general music history. Open to seniors by permission. M 2-4. Mr. Samuel.

The basic materials and techniques of musicological research.

[654 (formerly 553). ADVANCED STRUCTURAL ANALYSIS AND AN INTRODUCTION TO INTERRELATIONAL ANALYSIS

Spring term. Credit four hours. Prerequisite, Music 555 or equivalent. May be repeated for credit. Mr. Palmer. Not offered in 1965-1966.]

681-682. MUSICOLOGY (SEMINAR)

Throughout the year. Credit four hours a term. T 2-4. Mr. Bartha.

Subject for 1965-1966: Introduction to source research and stylistic analysis in the music of Haydn, Mozart, and Beethoven.

[683-684. PALEOGRAPHY

Throughout the year. Credit four hours a term. Prerequisite, reading knowledge of Latin, French, and German. Messrs. Grout and Holmes. Not offered in 1965-1966; will be offered in 1966-1967.]

PHILOSOPHY

Mr. N. Malcolm, Acting Chairman; Messrs. M. Black, S. M. Brown, Jr., J. V. Canfield, K. S. Donnellan, B. C. Goldberg, D. B. Lyons, N. C. Pike, D. Sachs, S. S. Shoemaker, and R. R. K. Sorabji.

Students expecting to major in philosophy must begin their systematic study of it in their underclass years and, at the very latest, the sophomore year. For admission to the major, the normal requirement is passing a philosophy course above 200 with a grade of 75 or above. Application for admission is made to the Chairman of the Department.

For the major, eight philosophy courses are required, including 24 hours of upperclass courses (numbered above 300). Each student majoring in philosophy must complete the following: (1) Philosophy 201 and at least one additional course in the history of philosophy chosen from among Philosophy 301, 303, and 305; (2) at least two courses numbered above 400; and (3) at least eight hours of approved upperclass courses in related subjects.

Students who wish to graduate with Honors in philosophy should discuss this with the Chairman of the Department at the time they apply for admission to the major. For provisional acceptance as a candidate for Honors, a student must have chosen a philosophy major, have a cumulative average of 80 for all work in the College, and have an average of 85 for courses in philosophy. All candidates for Honors normally enroll in the Honors Seminar (Philosophy 601-602) in both their junior and senior years. In addition, in their senior year, they pursue a program of research in either the fall or the spring term leading to the writing of an Honors essay.

The Distribution I requirement in the Humanities is satisfied in philosophy by completing any one of the following groups: Philosophy 101 plus any course numbered 200; 201-301; 210 and either 203 or 221.

101. INTRODUCTION TO PHILOSOPHY

Either term. Credit three hours. Open only to freshmen and sophomores throughout the University. Fall term: M W F 9, 11, 12, T Th S 10, 11, 12. Spring term: M W F 9, 10, 12, 2, T Th S 9, 12. Registration is limited to 30 students a sections. Messrs. Canfield, Donnellan, Goldberg, Lyons, Malcolm, Pike, Sachs, Shoemaker, and Sorabji.

An introduction to philosophical ideas and problems through an intensive study of the writings of several major philosophers.

110. INTRODUCTION TO LOGIC

Either term. Credit three hours. Open only to freshmen and sophomores throughout the University. Fall term: M W F 10, T Th S 9. Spring term: M W F 12, T Th S 12. Registration is limited to 40 students a section. Messrs. Canfield, Goldberg, and Lyons.

An introduction to the principles and techniques of traditional and symbolic logic. Includes discussion of types of arguments, problems in logic, and logical concepts relevant to philosophy. Recommended to all underclassmen, including prospective philosophy majors, with an interest in logic. Upperclassmen with an interest in logic should obtain advice from the instructor of Philosophy 412.

201. ANCIENT AND MEDIEVAL PHILOSOPHY

Fall term. Credit four hours. Open to sophomores and upperclassmen throughout the University and to others by permission of the instructor. Required for students majoring in philosophy. T Th S 9. Discussion sections to be arranged. Mr. Sorabji.

Occidental philosophical thought from its Greek origins to the end of the medieval period. A study of the most important figures, works, and systems in their cultural context.

Philosophy 201 and 301 comprise a sequence in the history of philosophy. This sequence satisfies both the Distribution I requirement in the humanities and the history of philosophy requirement for the philosophy major.

203. SOCIAL AND POLITICAL PHILOSOPHY

Spring term. Credit four hours. Open to sophomores and upperclassmen and to freshmen who have taken 101. T Th S 10, and a fourth hour to be arranged. Mr. Pike.

An introductory examination of some of the more important concepts involved in social and political theory, for example, contract as the source of authority in the state, the purpose of government, justice, law, etc. Readings from such writers as Hobbes, Locke, Hume, Nietzsche, Hitler and Marx.

205. ELEMENTARY SEMANTICS

Fall term. Credit four hours. Open to sophomores and upperclassmen. M W F 2, and a fourth hour to be arranged. Registration is limited to 60 students. Mr. Donnellan.

A survey of the philosophy of language and symbolism, with detailed practice in interpretation. Topics include sign-using behavior, the nature of language, special types of discourse (scientific, poetic, mathematical), semantic fallacies.

210. PHILOSOPHICAL PROBLEMS

Either term. Credit four hours. Recommended for sophomores and juniors who are majors or prospective majors in philosophy; others may be admitted, but must obtain the permission of the instructor. Registration is limited to 35 students a section.

The study of a selected philosophical problem. Contemporary as well as classical sources.

Fall term: M W F 2, and a fourth hour to be arranged. Mr. Malcolm. Topic for 1965-1966: Freedom of the Will.

Spring term: T Th S 11, and a fourth hour to be arranged. Mr. Shoemaker. Topic for 1965-1966: Space and Time.

221. ETHICS

Spring term. Credit four hours. Open to sophomores and upperclassmen and to freshmen who have taken 101. M W F 11. Mr. Brown.

The basic moral ideas of Western civilization as interpreted by its major philosophers and moralists—Greek ethical theory, Hobbes and the British Utilitarians, Butler and Kant.

301. MODERN PHILOSOPHY

Spring term. Credit four hours. Open to upperclassmen throughout the University and to sophomores who have taken Philosophy 201, T Th S 9, and a fourth hour to be arranged. Mr. Shoemaker.

Development of occidental philosophy from the sixteenth to the end of the nineteenth century. A study of the most important figures, works, and systems in their cultural context.

[303. MEDIEVAL PHILOSOPHY: ADVANCED COURSE

Not offered in 1965–1966.]

304. ANCIENT PHILOSOPHY AND SCIENCE

Fall term. Credit four hours. Open without prerequisite to upperclassmen and graduate students; and to sophomores who have taken Philosophy 201 or History 311, T Th S 11, and a fourth hour to be arranged. Sorabji.

Studies in the borderland areas between ancient philosophy and science. A few topics will be selected for detailed study each year, and they will be drawn, for example, from early treatments of matter, motion, space and time, scientific method, teleology. All the writings discussed will be of philosophical interest, but the writers may include some who were not primarily philosophers. Knowledge of Greek and Latin will not be required.

305. SPECIAL TOPICS IN THE HISTORY OF PHILOSOPHY

Fall term. Credit four hours. Prerequisite, six hours of philosophy or consent of the instructor. M W F 10, and a fourth hour to be arranged. Mr. Goldberg.

Topic for 1965–1966: Kant's *Critique of Pure Reason*.

308. CONTEMPORARY PHILOSOPHY

Fall term. Credit four hours. Prerequisite, six hours of philosophy or consent of the instructor. M W F 11, and a fourth hour to be arranged. Mr. Canfield.

A study of major figures or movements in twentieth-century philosophy.

Topic for 1965–1966: Sartre.

310. PHILOSOPHY IN LITERATURE

Spring term. Credit four hours. Open without prerequisite to upperclassmen in the College and to others by consent of the instructor. M W F 11, and a fourth hour to be arranged. Mr. Sachs.

An examination of philosophical topics concerning the condition and conduct of human life, as they appear in a selection of literary works, from Sophocles' *Oedipus Rex* to Kafka's *Metamorphosis*.

[313. AMERICAN PHILOSOPHY

Not offered in 1965–1966.]

322. PHILOSOPHY OF RELIGION

Fall term. Credit four hours. Open to upperclassmen without prerequisite. T Th S 12, and a fourth hour to be arranged. Mr. Pike.

A philosophical examination of some major theological issues: religious experience, religious language, arguments for the existence of God, miracles, faith.

[323. AESTHETICS

Not offered in 1965-1966.]

325. ETHICAL THEORY

Fall term. Credit four hours. Prerequisite, any 200-level course or consent of the instructor. T Th S 11, and a fourth hour to be arranged. Mr. Lyons.

A systematic study of one or two types of ethical theory.

Topic for 1965-1966: Moral Sense and Moral Law: Hume and Kant.

327. INTRODUCTION TO PHILOSOPHY OF SCIENCE

Spring term. Credit four hours. Open to juniors, seniors, and graduate students. T Th S 10, and a fourth hour to be arranged; discussion section for graduate students to be arranged. Mr. Canfield.

Critical analysis of scientific methods with special reference to the natural sciences; detailed study of such topics as causality, theory making, concept formation and measurement.

[333. PHILOSOPHY OF PSYCHOLOGY

Not offered in 1965-1966.]

402. PROBLEMS IN ETHICS AND PHILOSOPHY OF MIND

Spring term. Credit four hours. Open to juniors, seniors, and graduate students. Prerequisite, 9 hours of philosophy or consent of the instructor. M W F 2, and a fourth hour to be arranged. Mr. Sachs.

Selected topics in moral and mental philosophy: moral feelings and attitudes, ethical subjectivism and ethical relativism, thought and action, intentions, oneself and one's future.

Topics for 1965-1966: to be announced.

405. PROBLEMS IN PHILOSOPHY OF LANGUAGE

Spring term. Credit four hours. Open to juniors, seniors, and graduate students. Prerequisite, Philosophy 205 or consent of the instructor. M W F 10, and a fourth hour to be arranged. Mr. Goldberg.

An examination of various theories of meaning from Wittgenstein's *Tractatus* to the present, with special reference to the development from logical atomism to the theory of meaning as "use" and the contrasts between formal and informal approaches.

412. DEDUCTIVE LOGIC

Fall term. Credit four hours a term. Prerequisite, consent of the instructor. Intended for philosophy majors, graduate students, and others having suitable background. M W F 12, and a problems section to be arranged. Mr. Donnellan.

Introduction to current methods of formal logic and their philosophical implications—propositional calculus, calculus of functions, theory of descriptions, properties of formal systems.

[413. DEDUCTIVE LOGIC

Not offered in 1965-1966.]

[421. PROBLEMS IN PHILOSOPHY OF SCIENCE

Not offered in 1965-1966.]

423. METAPHYSICS

Spring term. Credit four hours. Open to graduate students and seniors majoring in philosophy, to others only by consent of the instructor. M W F 11, and a fourth hour to be arranged. Mr. Malcolm.

Topic for 1965-1966: Philosophy of Mind: Descartes and Wittgenstein.

425. CONTEMPORARY ETHICAL THEORY

Spring term. Credit four hours. Open to graduate students and seniors majoring in philosophy, to others only by consent of the instructor. T Th S 11, and a fourth hour to be arranged. Mr. Lyons.

Topic for 1965-1966: Rights—Natural, Moral and Legal—and Related Notions such as Duty and Obligation.

[427. THEORY OF KNOWLEDGE

Not offered in 1965-1966.]

429. PHILOSOPHY OF LOGIC

Spring term. Credit four hours. Prerequisite, Philosophy 412, Mathematics 381, or consent of the instructor. Open to seniors and graduate students; others by consent of the instructor. M W F 12. Discussion section for graduate students, F 2. Mr. Black.

Topic for 1965-1966: The Logical Foundations of Mathematics, with Special Reference to the Work of Russell and Frege.

430. PLATO AND ARISTOTLE

Spring term. Credit four hours. Open to philosophy majors, graduate students, and others by consent of the instructor. M W F 10, and a fourth hour to be arranged. Mr. Sorabji.

Topic for 1965-1966: Aristotle's Psychological Writings.

490. SPECIAL STUDIES IN PHILOSOPHY

Either term. Credit four hours. Open only to Honors students in their senior year. Members of the Department.

Seminars

551. PHILOSOPHY OF RELIGION

Spring term. Credit three hours. Th 2-4. Mr. Pike.

Topic for 1965-1966: The Attributes of God.

576. PLATO

Fall term. Credit three hours. M 3-5. Mr. Sachs.

Topic for 1965-1966: to be announced.

[585. ETHICS AND VALUE THEORY

Not offered in 1965-1966.]

[587. AESTHETICS

Not offered in 1965-1966.]

588-589. METAPHYSICS

Both terms. Credit three hours. Fall term: W 3-5. Mr. Shoemaker.

Topic for 1965-1966: Identity. Spring term: W 3-5. Mr. Donnellan.

Topic for 1965-1966: to be announced.

594. THEORY OF KNOWLEDGE

Fall term. Credit three hours. T 2-4. Mr. Malcolm.

Topic for 1965-1966: Explaining Behavior.

595. SEMANTICS AND LOGIC

Spring term. Credit three hours. Open only to graduate students. T 2-4. Mr. Black.

Topic for 1965-1966: to be announced.

601. HONORS SEMINAR

Spring term. Credit four hours. F 3-5. Mr. Canfield.

Topic for 1965-1966: Emotion.

PHYSICS

Mr. L. G. Parratt, Chairman; Messrs. V. Ambegaokar, K. J. Barnes, L. L. Barnes, A. J. Bearden, K. Berkelman, H. A. Bethe, R. Bowers, P. A. Carruthers, G. V. Chester, D. D. Clark, D. R. Corson, R. M. Cotts, T. R. Cuykendall, T. K. Dahlblom, J. P. Delvaille, J. W. DeWire, D. A. Edwards, D. Fisher, D. B. Fitch, C. W. Gartlein, L. H. Germer, K. Gottfried, K. I. Greisen, F. L. Gross, L. N. Hand, P. L. Hartman, D. F. Holcomb, T. Kinoshita, J. A. Krumhansl, P. K. Kuo, D. M. Lee, R. M. Littauer, H. Mahr, N. March, B. D. McDaniel, N. D. Mermin, N. B. Mistry, P. Morrison, M. S. Nelkin, H. F. Newhall, J. Orear, T. J. Peterson, R. O. Pohl, A. L. Read, T. N. Rhodin, B. Robertson, R. Rubinstein, E. E. Salpeter, D. B. Scarf, H. W. Schnopper, B. M. Siegel, A. J. Sievers, J. Silcox, R. H. Silsbee, A. Silverman, R. L. Sproull, P. C. Stein, R. Talman, W. Webb, D. H. White, J. W. Wilkins, K. G. Wilson, R. R. Wilson, W. M. Woodward and D. R. Yennie.

Entering freshmen exceptionally well prepared in physics may receive advanced placement and credit for one or two terms of Physics 101-102, 121-122, or 207-208 by demonstrating a high level of proficiency in (a) the advanced placement examination of the College Entrance Examination Board

or (b) the advanced placement examination given at Cornell just before the start of classes in the fall. Application for the Cornell examination should be made to the Department of Physics no later than the first registration day. Note that an entering freshman may proceed directly into sophomore physics only if he has also advanced placement in calculus.

A student interested in a physics major program should take Physics 207-208.

A student will ordinarily be admitted to a major program, either Option A or B, if he has passed at a good level of proficiency one year of college physics and of calculus. If the College language requirement and/or the requirements of Distribution I will not be completed in the underclass years, the candidate must present a plan acceptable to his prospective major adviser for completing these requirements together with those for the major and for Distribution II.

TWO MAJOR OPTIONS

Option A is intended primarily for students who plan to pursue graduate studies in a physical or biological science, or otherwise to become professional scientists; Option B is intended primarily for students who have broader interests (less physics specialization at the Bachelor-degree level), e.g., for those who plan to teach in precollege programs, to enter the medical profession, or to pursue graduate studies in a non-science field. The choice of Option B, however, does not preclude a professional career in physics or other natural science if the student elects more than the minimal work required for this option, or if he accepts a prolongation of his period of graduate study.

Option A. (a) Thirty credit hours of physics courses selected from those courses indicated by the symbol # in the list below, including at least two of the three courses Physics 310, 360, and 410, and Physics 443, and at least one of Physics 444 or 454, with twenty of these thirty hours at a grade of 70 or higher; and (b) Mathematics 421 (or 216); or the equivalent as judged by the student's major adviser. Graduate courses in physics (numbered above 499) will not be accepted as substitutes in meeting requirement (a). As a guide for Option A major students, Physics 305 and either 310 or 360 should be taken in the sophomore year. It is possible but very difficult to complete Option A starting physics and mathematics in the sophomore year.

Option B. (a) Fifteen credit hours of physics courses numbered between 300 and 500, approved by the major adviser, including Physics 310 and 436, or their equivalent; (b) three credit hours in mathematics beyond Mathematics 213, 221, or 293; and (c) eighteen credit hours in approved courses in the natural sciences with at least eight of these eighteen hours in courses numbered above 300. Requirement (c) may be satisfied in part by approved additional physics courses numbered between 300 and 500; and up to eight of the eighteen hours may be in history of science or philosophy of science. It is usually possible to complete this option starting in the sophomore year.

Students who have an interest in eventual graduate work in any science are strongly advised to meet the foreign language requirement (at least

Qualification) in a foreign language different from the one offered for admission to the College; and at least one of these two languages should be French, German, or Russian.

A student may be granted Honors in physics upon the recommendation of the Physics-Majors Committee of the physics faculty. Any student interested in the Honors program should consult with his major adviser before registering for the work of his senior year.

DISTRIBUTION REQUIREMENTS

The Distribution I requirement in physical sciences is satisfied in physics by Physics 101-102, 201-202, 207-208, or with Cornell Summer Session courses Physics 105 and 3 credit hours in Physics 109.

Distribution II requirements, with a non-physics major, may be met in any of several ways, but a recommended sequence is Physics 207-208-209 and any additional 3 or more credit hours of physics courses numbered above 300. Physics 201-202 is recommended as a 6-hour terminal sequence in partial fulfillment of these requirements (the requirements would then be completed with 8 hours of related courses in another field).

With a physics major, the Distribution II requirements may be satisfied in any of many ways. Commonly, Mathematics 422-423 (Option A) or 215-216 (Option B) are included in this Distribution, and, sometimes, about half of the required fourteen hours are selected from approved advanced courses offered in the College of Engineering. (Note, however, that no more than twelve hours taken outside the College of Arts and Sciences may be counted toward the minimum of sixty hours taken in upperclass standing.)

SPECIAL COURSES AND SEQUENCES

Physics 121-122 and 223-224 or 225-226 are designed as a four-term introduction to analytical physics for students in the College of Engineering. Assignment to a given sequence in the second year will be made on the basis of the student's previous performance; students of engineering should see the Director of the Division of Basic Studies of the College of Engineering for section assignments.

Physics 337-338, following 226, contains parts of Physics 305, 307, 319, and 325, and prepares students for course Physics 443.

Physics 431 is primarily for graduate students in a field other than physics (e.g., in chemistry, biology, engineering, mathematics) who have had about two years of college physics and who wish a short-cut to more advanced physics courses. For such students who have had less than two years of college physics, Physics 303, 322 (and possibly 307 and/or 436) should precede 431.

For prospective teachers of a physical science a recommended minimal sequence is Physics 207-208-209-310-311-312. A more complete preparation would replace 209 with 303-322-307-436.

101-102. GENERAL PHYSICS

Throughout the year. Credit four hours a term. Prerequisite, three years of college preparatory mathematics or permission of the instructor. Course 101 is prerequisite

to 102. Designed as a two-term survey course similar to but less analytically demanding than course 207-208. Most students majoring in a natural science who have had or are co-registered in calculus should elect Physics 207-208 instead of this course. Demonstration lectures, M W 9 or 11. Two discussion hours per week and one two-hour laboratory alternate weeks, as assigned. Preliminary examinations will be held at 8 p.m. Oct. 27, Dec. 1, Jan. 12, Mar. 9, Apr. 13, May 11. Messrs. Cotts, Chester, Hand, and Staff.

Basic principles and their relation to other physical sciences. Topics include: motion, dynamics, conservation laws, kinetic theory, gravitational and electromagnetic forces and fields, wave motion and light, relativity, atomic physics, structure of matter, and nuclear physics. As time permits, philosophical and social overtones are discussed. At the level of *Fundamental Physics* by Orear.

121-122. INTRODUCTORY ANALYTICAL PHYSICS

Throughout the year. (Physics 121 is also offered in the spring term for students who have completed but failed the course in the preceding fall term; permission of the instructor is required.) Credit three hours a term. Prerequisite, calculus or co-registration in Mathematics 191-192. Course 121 is prerequisite to 122. Primarily for students of engineering. Lecture, T 9, 11, or 2. Two discussion periods per week and one 2½ hour laboratory period every other week, as assigned. Preliminary examinations will be held at 7:30 p.m. on Oct. 26, Nov. 30, Jan. 11, Mar. 15, Apr. 12, May 17. Messrs. Newhall, Gross, Kuo, and Staff.

The mechanics of particles: kinematics of translation, dynamics, conservation of energy. The properties of the fundamental forces: gravitational, electromagnetic, and nuclear. Conservation of linear momentum, kinetic-molecular theory of gases, properties of solids and liquids, mechanics of rigid bodies, harmonic motion. At the level of *Introductory Analytical Physics*, third edition, by Newhall.

200. PHYSICS FOR STUDENTS OF BIOLOGY

Fall term. Credit four hours. Prerequisites, Physics 102 or 208, six credit hours in college chemistry, and six in biological science. Students offering Physics 101-102 who have an average grade therein below 70 must obtain permission of the instructor. Lectures, T Th 12. Laboratory, T or F 2-4. Individual conferences to be arranged. One term paper required. Mr. L. Barnes and Staff.

Lectures, laboratory experiments, and conferences. Selected topics related to the study of biology are chosen from: properties of matter, electricity, electromagnetic radiation, and nuclear physics.

201-202. ASPECTS OF THE PHYSICAL WORLD

Throughout the year. Credit three hours a term (only one hour credit a term if taken after Physics 101-102). Prerequisites, three years of college preparatory mathematics and high school physics or chemistry, or consent of the instructor. Course 201 is prerequisite to 202. Not open to freshmen. An introductory and terminal course for junior and senior non-science majors. Pre-medical students and all others who plan to take any second-year (or higher) natural science course should elect Physics 101-102 or 207-208 instead of this course. Lectures, M W F 2. One 2-hour laboratory-discussion period per week, as assigned. Not all of this total of 5 hours will be used each week; class time will average about 4 hours per week. Messrs. Holcomb, R. Wilson, Schnopper, and Staff.

A set of widely ranging but related topics will be considered, without attempt to cover much of the subject of physical science systematically at any level. A diversity

of treatment is employed, ranging from the exploration of some literary consequences to detailed problem-solving and laboratory experiment. The central aim is to give upperclass non-science majors in the College of Arts and Sciences some insight into the methods and the results of physics and its neighboring sciences. Typical topics: the nature of space and time; relativity; the solar system and gravitation; atoms and the structure of matter; energy—its meaning, measures, and use; and molecules and crystals.

207-208. FUNDAMENTALS OF PHYSICS

Throughout the year. Credit four hours a term. Prerequisite, calculus or co-registration in Mathematics 111-112 or 191-192, or consent of instructor. High school physics is a normal background but is not required. Course 207 is prerequisite to 208. Intended as a first course for most students majoring in a natural science or in mathematics. Demonstration lectures, W F 9 or 11. Two discussion periods a week, and one 2½ hour laboratory period alternate weeks, as assigned. Preliminary examinations will be held at 7:30 p.m. on Nov. 2, Dec. 14, Mar. 8, and Apr. 19. Messrs. Mahr, Bethe, Robertson, and Staff.

Emphasis is placed on the fundamental concepts in each of the several branches of physics and on the analytical techniques of problem and laboratory work. At the level of *Physics for Students of Science and Engineering* by Halliday and Resnick.

208H. FUNDAMENTALS OF PHYSICS

Spring term. An honors section of 208. Prerequisite, invitation by the instructor. Students should preregister for 208. Mr. Salpeter and Staff.

209. RECENT DEVELOPMENTS IN PHYSICS

Fall term. Credit three hours. Prerequisites, Physics 208 and Mathematics 112, or consent of the instructor. Not recommended for physics majors. Lectures, discussions, and problems, M W F 12. Mr. Berkelman.

A continuation of Physics 207-208 with emphasis on twentieth century concepts in physics (with some philosophical and social overtones as time permits).

223-224. INTRODUCTORY ANALYTICAL PHYSICS

Throughout the year. (Physics 223 is also offered in the spring term for students who have completed but failed the course in the preceding fall term; permission of the instructor is required.) Credit four hours a term. Prerequisites, Physics 122 and co-registration in Mathematics 293-294, or equivalent. Course 223 is prerequisite to 224. Lecture, Th 9 or 11. Two discussion periods and one 2½ hour laboratory period every week, as assigned. Messrs. Talman, Peterson, K. Wilson, and Staff.

A survey of electric and magnetic fields including a review and an extension of the study of static fields and their sources. Fields in simple dielectrics, charges in motion, time-varying fields, induced electromotive force, fields in magnetic materials, energy of charge and current distributions, electrical oscillations, electromagnetic field relations. Wave motion with emphasis on the properties of electromagnetic waves; reflection, refraction, dispersion, and polarization. Superposition of waves; interference and diffraction. Selected topics from contemporary physics such as relativity, quantum effects, atomic and x-ray spectra, nuclear structure and reactions, solid state physics. The laboratory work includes experiments in electrical measurements, physical elec-

tronics, optics, and nuclear physics. At the level of *Electric and Magnetic Fields* by Tomboulion and of *Elementary Modern Physics* by Weidner and Sells.

225-226. INTRODUCTORY ANALYTICAL PHYSICS

Throughout the year. Credit four hours a term. Prerequisites, same as for Physics 223-224. Course 225 is prerequisite to 226. Lecture, T 9 or 11. Two discussion periods and one 2½ hour laboratory period every week, as assigned. Messrs. Delvaille, Fitchen, and Staff.

The main topics are the same (none omitted) as those listed under Physics 223-224, but their treatment is more analytical and somewhat more intensive. At the level of *Electricity and Magnetism* by Kip, *Optics* by Rossi, and *Elementary Modern Physics* by Weidner and Sells.

303. INTERMEDIATE MECHANICS

Fall term. Credit three hours. Prerequisites, Physics 102 (by special permission) or 208, and Mathematics 112 or 192 (co-registration in Mathematics 213 or 293 is recommended), or consent of the instructor. T Th S 9. Mr. Gottfried.

Newtonian mechanics, conservation laws, central forces, oscillation systems and wave propagation, relativity. At the level of *Mechanics and Properties of Matter*, second edition, by Stephenson.

#305. THE REVOLUTION IN PHYSICS, 1900-1927

Fall term. Credit four hours. Prerequisites, Physics 208 (by special permission) or 208II, and co-registration in Mathematics 221 or 293 or consent of the instructor. Primarily for students intending to major in a natural science or in mathematics. M W F 12 and M or T 3. Mr. Sproull.

Developments leading to modern physical concepts such as quantum theory of radiation, quantum mechanics, special relativity, and atomic structure. At the level of *Principles of Modern Physics* by French, and of the first half of *Modern Physics*, second edition, by Sproull.

307. OPTICS AND WAVE MOTION

Fall term. Credit four hours. Prerequisite, Physics 322 or consent of the instructor. Lectures, T Th S 11 and S 12. Mr. Lee.

Properties of waves (electromagnetic, mechanical, acoustic, etc.), velocity of light, polarization, interference phenomena, Huygens' and Fermat's principles, Fraunhofer and Fresnel diffraction with application to image formation, double refraction, optical activity, photons and phonons, coherence phenomena and lasers. At the level of *Fundamentals of Physical Optics*, third edition, by Jenkins and White, and *Radiation and Optics* by Stone.

#310. INTERMEDIATE EXPERIMENTAL PHYSICS

Either term. Credit four hours. Prerequisites, Physics 102 (by special permission) or 208 or 224, and Mathematics 112 or 192, or consent of the instructor. Laboratory, M W 1:40-4:30. Lecture, F 1:40-3. Enrollment limited to 40 in the fall term. In the spring term an additional laboratory section will be opened Th 1:40-4:30 and S 9-12 if registration exceeds 40 students. Messrs. Pohl, Read, and Staff.

Lectures on topics in experimental techniques. Selected laboratory experiments to

suit the student's need, e.g., mechanics, errors and probability, electricity, magnetism, optics, spectroscopy, and modern physics.

311-312. SYNTHESIS OF PHYSICS FOR TEACHERS

Throughout the year. Credit one hour a term. Prerequisites, at least one year of college physics and of calculus, and an interest in science teaching at the precollege levels. Offered only if enrollment exceeds seven students. Course 311 is not a prerequisite to 312. T 1:40-4:30. Mr. Morrison.

Primarily for teachers or for students interested in science teaching. Some unifying theme applicable in several areas of physics is explored each term in seminars and in flexible laboratory work. Examples are: randomness and chance, wave phenomena, physical forces in nature.

#319. ANALYTIC MECHANICS

Fall term. Credit four hours. Prerequisites, Physics 208 (by special permission) or 208H or 226 (and preferably 305 and 310), and Mathematics 222 or 294 (or co-registration in 215), or consent of the instructor. T Th S 9 and Th or F 3. Mr. Ambegaokar.

Analytical mechanics of material particles, systems of particles and rigid bodies; oscillating systems; planetary motion, stability of orbits; collisions; Euler's equations, gyroscopic motion; Lagrange's equations; Hamilton's equation; relativistic mechanics. At the level of *Principles of Mechanics*, third edition, by Sygne and Griffith or of *Mechanics*, second edition, by Symon.

322. PRINCIPLES OF ELECTRICITY

Spring term. Credit four hours. Prerequisites, Physics 224 or 303 (and preferably 310), and Mathematics 213 or 221 or 293, or consent of the instructor. M W F 11 and Th 12 or F 3. Mr. DeWire.

Topics selected from Physics 325-326, treated with less mathematical sophistication. At the level of *Electricity and Magnetism* by Duckworth, or of *Principles of Electricity*, third edition, by Page and Adams.

#325-326. ELECTRICITY, MAGNETISM, AND PHYSICAL OPTICS

Throughout the year. Credit four hours each term. Prerequisites, same as for Physics 319. Course 325 is prerequisite to 326. Lectures, T Th S 11 and W or Th 3. Preliminary examinations will be held at 7:30 p.m. on Oct. 29, Dec. 10, Mar. 11, and Apr. 22. Fall term, Mr. Pohl. Spring term, Mr. Wilkins.

Electrostatics: Laplace and Poisson equations, boundary value problems, dielectrics. Magnetostatics: magnetic media, boundary conditions, mechanical and field energy. Electrodynamics: wave equation, Maxwell's equations and their applications, transmission lines, wave guides, radiation from a moving charge. Physical optics: reflection, refraction, dispersion, polarization, Fresnel and Fraunhofer diffraction, lasers and masers. Special relativity. At the level of *Introduction to Electromagnetic Fields and Waves* by Corson and Lorrain, *Electricity and Magnetism* by Slater and Frank, and *Optics* by Sommerfeld.

337. INTERMEDIATE ANALYTICAL PHYSICS

Fall term. Credit four hours. Prerequisites, Physics 226, Mathematics 294, or consent of the instructor. Primarily for students of engineering. Lecture, M W F 10, T 2;

discussion section, Th 3 or F 2. Preliminary examinations will be held at 7:30 p.m. on Oct. 18 and Dec. 6. Mr. Webb.

Electrostatic and electromagnetic fields, Laplace and Poisson equations and boundary value problems; polarization of dielectric and magnetic media; mechanical and field energy; Maxwell's equations with applications; wave equation. Physical optics: interference phenomena, Fraunhofer and Fresnel diffraction, polarization, dispersion.

338. INTERMEDIATE ANALYTICAL PHYSICS

Spring term. Credit four hours. Prerequisites, Physics 337 or consent of the instructor. Primarily for students of engineering. Lecture, M T W Th F 11; discussion section, T or W 2. Mr. Silcox.

Analytical mechanics of material particles, systems of particles, rigid bodies, and fluids; oscillating systems; planetary motion and stability of orbits; collisions, gyroscopic motion; Lagrange's equations; Hamilton's equations. Analogue between mechanical systems and electric systems with network applications. Loaded transmission line and vibrating string. Phenomenological introduction to atomic and nuclear physics, with emphasis on the interpretation of observations in terms of the breakdown of classical mechanics. Selected topics from atomic and nuclear physics, including scattering experiments, spectroscopy, and properties of particles. Special relativity.

#342. KINETIC THEORY AND THERMODYNAMICS

Spring term. Credit four hours. Prerequisites, Physics 305 (by special permission) or 319 or 322, and Mathematics 214 or 222 or 294, or consent of the instructor. T Th S 9 and either M or T 3. Mr. Lee.

Concepts of temperature, laws of thermodynamics, Carnot cycles, entropy, thermodynamic relations, free energies, phase equilibrium, multi-component systems, chemical reactions, and thermodynamic stability criteria. Application of thermodynamics to physical systems including gases, paramagnetic solids, and electromagnetic radiation. Normal and Poisson distributions, and the random walk problem. Introduction to statistical mechanics including a treatment of Maxwell-Boltzmann, Bose-Einstein, and Fermi-Dirac statistics with applications. Elementary transport theory. At the level of *Thermal Physics* by Morse, and *Statistical Thermodynamics* by Reif.

#360. INTRODUCTORY ELECTRONICS

Either term. Credit four hours. Prerequisite, Physics 208 or 224, or consent of the instructor. Lectures and laboratory, M W F or T Th F 1:40-4:30. Mr. White.

Introduction to the principles of vacuum tubes, semiconductor devices, electronic components and circuits, and to the operating characteristics of power supplies, amplifiers, oscillators, servo systems, switching and timing circuits, etc. At the level of *Elementary Electronics* by White.

402. BIOPHYSICS

Spring term. Credit four hours. Prerequisites, Physics 200 or 209 or 224, two years of college chemistry, two years of college biology, Mathematics 112, and permission of the instructor. T Th 12 and conference hours to be arranged. Mr. L. Barnes.

An introductory study of topics in a number of fields: sound and the physics of hearing; ultrasonics and its use; biophysics of vision; electrical properties of nerve and muscle cells; biophysical aspects of hemodynamics; absorption of electromagnetic radiation by biological materials; and effects on biological materials of high-energy charged particles. Topics vary according to the special interests of the class. Two

papers required: one about mid-term and one near the end of the term. At the level of *Biophysical Science* by Ackerman.

#410. ADVANCED EXPERIMENTAL PHYSICS

Either term. Credit four hours. Prerequisites, Physics 310 or 360, and 303 or 319 or 338, and 322 or 325 or 337, or consent of the instructor. Limited to seniors except by special permission. Laboratory, T W or Th F 1:40-4:30. Lecture, M 1:40-3:00. Messrs. Hartman, Berkelman, Bowers, Cuykendall, DeWire, Mistry, Robertson, Rhodin, Rubinstein, Siegel, Sievers, Sproull, Talman, Webb, and Woodward.

Lectures and problems on selected topics in experimental concepts and techniques. About seventy different experiments are available in the laboratory among the subjects of mechanics, acoustics, optics, spectroscopy, electrical circuits, electronics and ionics, heat, X-rays, crystal structure, solid state physics, cosmic rays, and nuclear physics. During a term the student is expected to perform four to eight experiments, selected to meet his individual needs. Emphasis is placed on independent work.

431. INTRODUCTORY THEORETICAL PHYSICS

Fall term. Credit four hours. Primarily for graduate students in a science other than physics. Prerequisites, Physics 303 and 322 (and preferably 307), and co-registration in Mathematics 215 (preferably 415), or consent of the instructor. M W F S 9. Mr. Salpeter.

Classical mechanics and electromagnetic theory. At the level of *Theoretical Physics* by H. Wangness.

436. MODERN PHYSICS

Either term. Credit four hours. Prerequisites, Physics 322 and Mathematics 214 or 222 or 294, or consent of the instructor. Fall term, M W F 11 and T 3. Mr. Clark. Spring term, T Th S 11 and T 3. Mr. Woodward.

Selected topics in atomic, solid state, and nuclear physics; fundamental particles, atomic spectra, fundamentals of the quantum theory, the periodic table, X-rays, cosmic rays, properties of nuclei, and nuclear interactions. At the level of *Principles of Modern Physics* by French.

#443. ATOMIC PHYSICS AND INTRODUCTION TO QUANTUM MECHANICS

Fall term. Credit four hours. Prerequisites, Physics 319 and 325, or 338, or 431; and Mathematics 216 or co-registration in 421; or consent of the instructor. Very few students may advisably take Physics 572 instead of this course. T Th S 10 and M 9 or 3. Mr. McDaniel.

Difficulties with the classical interpretations of atomic properties and atomic structure are resolved in terms of quantum mechanics. At the level of *Introduction to Quantum Mechanics* by Dicke and Wittke and of *Principles of Modern Physics* by Leighton.

#444. NUCLEAR AND HIGH-ENERGY PARTICLE PHYSICS

Spring term. Credit four hours. Prerequisite, Physics 443 or consent of the instructor. T Th S 10 and T 2. Mr. Orear.

Behavior of high-energy particles and radiation; elementary particles and their characteristics; basic properties of nuclei; nuclear reactions; nuclear forces; cosmic rays; general symmetries and conservation laws of nature. At the level of *High Energy Particles* by Rossi and of *Introductory Nuclear Theory* by Elton.

#454. INTRODUCTORY SOLID STATE PHYSICS

Spring term. Credit four hours. Prerequisite, Physics 443 or consent of the instructor. M W F 9, and M 3. Mr. Bowers.

A semiquantitative introduction to modern solid state physics, including lattice structure, lattice vibrations, thermal properties, electron theory of metals and semiconductors, magnetic properties, and superconductivity. At the level of *Introduction to Solid State Physics*, second edition, by Kittel.

481-482. SENIOR SEMINAR

Throughout the year. Credit one hour each term. Prerequisite, consent of the student's major adviser (or of the instructor if the student is not majoring in physics). Course 481 is not prerequisite to 482. Intended primarily for Option B majors in their senior year. Offered only if enrollment exceeds six students. Th 3. Mr. Parratt.

Practice in the organization, oral presentation, and discussion of topics selected to illustrate the unifying methods and *modi operandi* which underly many diverse fields of physics. An attempt is made to interlock physics with other fields of knowledge.

490. INDEPENDENT STUDY IN PHYSICS

Either term. Credit one to four hours a term. Prerequisites, Physics 310 and 322 or equivalent. Ordinarily limited to seniors. Hours to be arranged. Permission of the professorial staff member under whose direction the work is to be done *must be obtained before registration*.

Individual project work. Reading or laboratory work in any branch of physics. Commonly associated with the Physics 410 laboratory.

#491-492. SENIOR SEMINAR

Throughout the year. Credit one hour each term. Prerequisite, consent of the student's major adviser (or of the instructor if the student is not majoring in physics). Course 491 is not prerequisite to 492. Intended primarily for Option A majors in their senior year. Th 3. Fall term, Mr. Krumhansl. Spring term, Mr. Littauer.

Practice in the organization, oral presentation, and discussion of selected topics in physics.

500. INFORMAL GRADUATE LABORATORY

Either term. Credit one to three hours a term. Associated with the Physics 410-510 laboratory. Primarily for graduate students who do not have the prerequisites for Physics 510. T W or Th F 1:40-4:30. Mr. Hartman and Staff.

505-506. DESIGN OF ELECTRONIC CIRCUITRY

Throughout the year. Credit two hours each term. Prerequisites, Physics 310, Mathematics 214, familiarity with complex representation of a-c signals, and some introductory acquaintance with electronic instrumentation (e.g., Physics 360), or consent of the instructor. Course 505 is prerequisite to 506. T Th 9. Mr. Littauer.

Circuit techniques and design in electronic measurement and instrumentation with emphasis on pulse waveforms. Transistors and vacuum tubes are treated side by side; special devices are described briefly. At the level of *Pulse Electronics* by Littauer.

510. ADVANCED EXPERIMENTAL PHYSICS

Either term. Credit three hours per term. Prerequisites, Physics 410 and 443, or the equivalent. At least one term of Physics 510 is ordinarily required for the first-year graduate student of physics. Laboratory, T W or Th F 1:40-4:30. Messrs. Hartman, Berkelman, Bowers, Cuykendall, DeWire, Mistry, Robertson, Rhodin, Rubinstein, Siegel, Sievers, Sproull, Talman, Webb, and Woodward.

About seventy different experiments are available among the subjects of mechanics, acoustics, optics, spectroscopy, electrical circuits, electronics and ionics, heat, X-rays, crystal structure, solid state, cosmic rays, and nuclear physics. During the term the student is expected to perform four to eight experiments, selected to meet his individual needs. Stress is laid on independent work on the part of the student.

571. CLASSICAL MECHANICS

Fall term. Credit three hours. Prerequisites, Physics 319 or 338 or 431, and co-registration in Mathematics 415 or 423, or consent of the instructor. T Th S 11. Mr. Chester.

Lagrange's equations and applications to particle motion; small vibrations and linear vector spaces; continuum mechanics with application to wave motion and scattering; Hamilton's equations; introduction to variational methods for classical fields. At the level of *Classical Mechanics* by Goldstein.

572. QUANTUM MECHANICS

Either term. Credit four hours. Prerequisites, Physics 443 (except by special permission), and at least co-registration in Mathematics 415 or 423, or consent of the instructor. It is strongly recommended that Physics 443 and 571 precede 572. M W F 11 and S 12. Fall term, Mr. Krumhansl. Spring term, Mr. Kinoshita.

Principles of wave mechanics. Illustrative solutions of the Schrödinger equation. Scattering. Dirac's formulation of quantum mechanics, transformation theory. Symmetries: angular momentum, spin, the exclusion principle. Approximation methods. At the level of *Quantum Mechanics* by Messiah.

573. ELECTRODYNAMICS

Fall term. Credit four hours. Prerequisites, Physics 326 and 571 or consent of the instructor. M W F S 9. Mr. K. Wilson.

Introductory potential theory; Maxwell's equations and their meaning; quasi-static problems; energy and momentum of the field; waves in space and in guides; radiation and scattering; special relativity. At the level of *Electrodynamics of Continuous Media* by Landau and Lifshitz, or *Classical Electrodynamics* by Jackson.

574. INTERMEDIATE QUANTUM MECHANICS

Spring term. Credit four hours. Prerequisites, Physics 572 and Mathematics 416 or 423, or consent of the instructor. M W F 9. Mr. Carruthers.

Discussion of various applications of quantum mechanics such as collision theory, theory of spectra of atoms and molecules, theory of solids, emission of radiation, relativistic quantum mechanics. At the level of *Quantum Mechanics of One- and Two-Electron Atoms* by Bethe and Salpeter.

578. STATISTICAL MECHANICS AND KINETIC THEORY

Spring term. Credit three hours. Prerequisites, Physics 571 and 572, or consent of the instructor. M W F 10. Mr. Mermin.

Statistical mechanics: general principles and applications to the properties of gases, liquids, crystals, and transport phenomena. At the level of *Statistical Physics* by Landau and Lifshitz.

635. SOLID STATE PHYSICS

Fall term. Credit three hours. Prerequisite, Physics 572 or consent of the instructor. T Th S 11. Mr. Mermin.

An introduction to solid state physics including studies of crystal structure; mechanical, thermal, and electrical properties; magnetism; band structure; and selected topics.

636. ADVANCED SOLID STATE PHYSICS

Spring term. Credit three hours. Prerequisite, Physics 635 or consent of the instructor. T Th S 11. Mr. Ambegaokar.

Selected advanced topics in modern theoretical and experimental solid state physics; band theory, group theoretical considerations, optical properties, phonon physics, transport problems, magnetic and low-temperature behavior of solids. Frequent reference to current literature and conference material.

645. NUCLEAR PHYSICS

Fall term. Credit three hours. Prerequisite, Physics 572 or consent of the instructor. M W F 11. Mr. Hand.

Properties of nuclei, detection of particles, alpha decay, fission and thermonuclear reactions, gamma decay, beta decay, two-nucleon systems, nuclear models, nuclear reactions.

646. HIGH-ENERGY PARTICLE PHYSICS

Spring term. Credit three hours. Prerequisite, Physics 645 or consent of the instructor. M W F 11. Mr. Yennie.

The physics of nucleons, mesons, and strange particles from an experimental point of view. High energy phenomena, as opposed to classical nuclear physics, will be discussed. At the level of *An Introduction to Elementary Particles* by Williams.

651. ADVANCED QUANTUM MECHANICS

Fall term. Credit three hours. Prerequisite, Physics 573 and 574, or consent of the instructor. M W F 10. Mr. Yennie.

Relativistic quantum mechanics with emphasis on perturbation techniques. Extensive applications to quantum electrodynamics. Introduction to renormalization theory. At the level of *Relativistic Quantum Mechanics* by Bjorken and Drell.

652. QUANTUM FIELD THEORY

Spring term. Credit three hours. Prerequisite, Physics 651 or consent of the instructor. M W F 10. Mr. Gottfried.

Canonical field theory, model field theories, Green's functions, renormalization. Introduction to analytic properties of scattering amplitudes and dispersion relations. Applications to strong interactions. At the level of Bjorken and Drell, *Relativistic Quantum Fields*.

653. THEORY OF MANY-PARTICLE SYSTEMS

Fall term. Credit three hours. Prerequisites, Physics 635 and 574, or consent of the instructor. M W F 12. Mr. Wilkins.

The equilibrium and transport properties of macroscopic systems of many particles are studied at zero and finite temperatures. The thermodynamic Green's function techniques are developed and applied to a variety of systems. Probable topics for discussion are the electron gas at high densities, the normal Fermi liquid, superconductivity, ferromagnetism, and the anharmonic crystal.

657. THEORY OF NUCLEI

Fall term. Credit three hours. Prerequisites, Physics 574 and 645, or consent of the instructor. Offered in alternate years and only if registration exceeds nine students. M W F 9. Mr. Bethe.

Selected topics from the theory of nuclei, including nuclear forces, nuclear structure, and nuclear reactions.

661. HIGH-ENERGY PHENOMENA

Fall term. Credit three hours. Prerequisite, Physics 651 or consent of the instructor. Offered only if registration exceeds nine students. M W F 10. Mr. Kinoshita.

Topics of current interest in the theory of strong interactions. At the level of *Dispersion Relations* by Klein.

680. SPECIAL TOPICS

Either term. Credit one to three hours a term. Upon sufficient demand, seminars will be arranged in topics not currently covered in regular courses. Typical topics are group theory, analyticity, weak interactions, superfluids, stellar structure and evolution, plasma physics, cosmic rays, relativity theory, low-temperature physics, X-ray spectroscopy or diffraction, magnetic resonance, etc. For 1965-66: fall term: Weak Interactions, Mr. Carruthers; and Fluids, Mr. Nelkin; spring term: Superfluids, Messrs. Chester and Wilkins.

690. INDEPENDENT STUDY IN PHYSICS

Either term. Credit one to three hours a term. Special study in some branch of physics, either theoretical or experimental, under the direction of any professorial member of the staff. Permission of the staff member under whose direction the work is to be done *must be obtained before registration*.

PSYCHOLOGY

Mr. R. B. MacLeod, Chairman; Messrs. U. Bronfenbrenner, R. D. Darlington, S. W. Davis, W. C. Dilger, Mrs. C. Doyle, Messrs. J. J. Gibson, J. E. Hochberg, H. J. Johnson, W. W. Lambert, H. Levin, R. Longabaugh, J. B. Maas, L. Meltzer, F. Rosenblatt, T. A. Ryan, and H. J. Simmons, Mrs. P. C. Smith, Mr. R. R. Zimmermann.

THE MAJOR

Prerequisites for admission are: (a) Psychology 101, 201, and CD 115; (b) a cumulative average of 75 in courses in Psychology with no grade below 70

in the prerequisites; (c) completion of Distribution I requirements by end of sophomore year is normally expected; (d) acceptance by the Department's admissions committee.

Application forms may be obtained at the departmental office and must be filed two weeks before the preregistration period.

Requirements for the major are:

(a) Three laboratory courses (12 hours) at the 300 level or above. At least two of these laboratory courses must be chosen from among 305, 306, 307, 324, 326. The third laboratory course may be chosen from among 305, 306, 307, 309, 324, 326, 426, 462, 476, 477, Conservation 450 (College of Agriculture), Sociology 481.

(b) Sixteen additional hours in the major at the 300 level or above.

(c) Psychology 490, as partial preparation for a final comprehensive examination.

With permission of the major adviser, two of the following courses in other departments may be accepted toward the major requirements: Child Development and Family Relationships (Home Economics) 315, 317, 323, 360, 364, 374, or courses at the 400 level with permission of the adviser; Conservation (Agriculture) 490; Industrial and Labor Relations 310; Interdepartmental Courses 301-302; Sociology 381, 384, 481, 581, 681. *One* of the two courses from outside the Psychology Department may also be chosen from the following: Industrial and Labor Relations 210, 311, 410; Interdepartmental course 404; Rural Education (Agriculture) 451, 453, 454.

CONCENTRATION IN SOCIAL PSYCHOLOGY

Students who wish to concentrate in social psychology may major in either psychology or sociology. In psychology, the student should meet the major requirements (a) and (c) as outlined above, and instead of major requirement (b) above, he should take the following courses: (a) Anthropology 265 or 301; (b) Sociology 441 or 442; (c) Psychology 342; (d) Sociology 381; (e) one of the following: Psychology 345, 347, 571, 573, Sociology 384, 481, 581, 681.

THE HONORS PROGRAM

Prospective candidates for Honors are encouraged to file applications for provisional Honors status as early as possible but not later than April 15th of the junior year. For acceptance, the candidate must have, at a minimum, a cumulative grade average of 85 in all courses in psychology completed at the time of application.

Honors students are given the opportunity for experience in original investigation with the help of members of the faculty, and for some extensive reading in the field. Accordingly, they take an Honors seminar (491) and prepare a thesis (492). Final Honors standing is based upon a final comprehensive examination, a written thesis, and an oral defense of the thesis, as well as upon general academic performance.

DISTRIBUTION REQUIREMENTS

The Distribution I requirement in Social Sciences is satisfied in psychology by Psychology 101 and C. D. 115, or by one of these and any other course offered by the Department of Psychology.

Distribution II for non-majors: There are no rigidly defined sequences. Depending on the student's major interest, the following are suggested:

- (a) general experimental psychology
- (b) comparative and physiological psychology
- (c) social psychology and the psychology of personality
- (d) psychological measurement and individual differences
- (e) industrial psychology
- (f) abnormal psychology and experimental psychopathology

Students should feel free to consult members of the Department for advice.

PARTICIPATION IN EXPERIMENTS

Participation in psychological experiments may be required as a part of course work for any student when the instructor considers that it will be to the student's educational advantage.

101. INTRODUCTION TO PSYCHOLOGY: BASIC PROCESSES

Either term. Credit three hours. Open to freshmen. Three lectures and one section meeting per week. Fall term: lectures, M W F 10, sections to be assigned. Mr. Maas. Spring term: lectures, M W F 10, sections to be assigned. Mrs. Doyle.

The course emphasizes the study of basic processes, including the following: brain functioning, perception, learning, language and thinking, the biological drives, motivation, emotion, and personality.

INTRODUCTION TO PSYCHOLOGY: DEVELOPMENT OF HUMAN BEHAVIOR (C.D. 115)

Fall term. Credit three hours. Open to freshmen. Psychology 101 not prerequisite. Three lectures and an optional section meeting. Lectures, M W F 11; sections to be announced. Mr. Bronfenbrenner.

Concerned with the behavior of man as a social organism. Primary attention is given to the impact of environmental and social forces in the intellectual, emotional, and social development of the person from infancy through adulthood.

103. EDUCATIONAL PSYCHOLOGY

Spring term. Credit three hours. Prerequisite, an introductory course in psychology. M W F 9. Mr. Levin.

The major facts and principles of psychology bearing on educational practice and theory. Human learning, abilities, and group processes as they influence classroom learning will be stressed. Recent educational advances such as new curricula and programed learning will be discussed in the light of contemporary psychological theories.

201. INTRODUCTION TO EXPERIMENTAL PSYCHOLOGY

Spring term. Credit four hours. Prerequisite, Psychology 101 or C.D. 115, or consent of instructor. Lectures M W F 12. Laboratory T 8-10, 11-1, 2-4, W 8-10, 2-4, Th 8-10, 11-1, or 2-4. Mr. Simmons.

An analysis of current and classical research problems selected for their relevance to general theoretical issues and illustrative of modern research methods in psychology. Specific topics will be chosen from the fields of perception, learning, motivation, personality theory, and the like. Provides an introduction to laboratory methods and statistical analysis prerequisite to many of the advanced courses in psychology.

206. PSYCHOLOGY IN BUSINESS AND INDUSTRY

Spring term. Credit three hours. Prerequisite, Psychology 101 or C.D. 115, or consent of instructor. M W F 9. Mr. Maas.

Applications of psychological methods in advertising, market and motivation research, personnel selection and training (interviewing, testing), business and industrial counseling, executive development (creativity, group dynamics), conditions of efficient production (methods and job satisfaction), accident control.

208. INTRODUCTION TO PERSONALITY AND SOCIAL PSYCHOLOGY

Spring term. Credit four hours. Prerequisite, Psychology 101 or C.D. 115. T Th (S) 11. Mr. Meltzer.

A survey of principles and perspectives. Intended primarily for students who do not plan to take further work in personality or social psychology.

212. MODERN PSYCHOLOGY IN HISTORICAL PERSPECTIVE

Spring term. Credit four hours. Prerequisite, Psychology 101 or 102, or consent of instructor. Lectures, M W F 12. Mr. MacLeod.

An examination of the broad problems of psychology, e.g., mind and body, the basis of knowledge, the basis of conduct, as they have been envisaged at various periods of history. Special emphasis is laid on the relation between psychological thinking and development in philosophy, religion, the sciences, literature, and the arts. Designed for the general student; recommended but not required for prospective majors.

THE SOCIAL PSYCHOLOGY OF GROUPS (SOCIOLOGY 281)

Credit three hours. Fall term. Prerequisite, a course in sociology. M W F 11. Mr. Meltzer.

305. BASIC PROCESSES: PERCEPTION

Fall term. Credit four hours. Prerequisite, Psychology 201 or consent of instructor. Lectures M W 12, Laboratory, Th 1:40-4. Mr. Hochberg.

An account of the ways in which we register and apprehend the environment. The experimental study of sensory input, of psychophysical correspondence, of space, motion, objects, and events, and the relation of perceiving to everyday behaving and thinking.

306. BASIC PROCESSES: LEARNING

Spring term. Credit four hours. Prerequisite, Psychology 201 or consent of instructor. Lectures T Th 10. Laboratory, Th 1:40-4. Mr. Zimmermann.

The fundamental conditions and principles of learning, both animal and human. The basic phenomena of operant conditioning, human verbal and motor learning, discrimination learning and serial learning will be studied experimentally. Traditional

and contemporary theories of learning will be reviewed and selected experimental literature will be discussed with special emphasis upon recent developments in the field.

307. BASIC PROCESSES: MOTIVATION

Fall term. Credit four hours. Prerequisite, Psychology 201 or consent of instructor. Lectures W F 9. Laboratory, T 1:40-4. Mr. Ryan.

Factors controlling the initiation, direction, and intensity of activity. Methods of research with emphasis upon experimental and statistical controls. Evaluation of evidence on major theories of motivation such as instinct theory, psychoanalysis, and behavioristic drive theory.

[309. SOCIAL PERCEPTION, ATTENTION, AND COMMUNICATION

Fall term. Credit four hours. Prerequisite, Psychology 201 or consent of instructor. Mr. Hochberg. Not offered in 1965-1966.]

[311. FEELING AND EMOTION

Fall term. Credit 4 hours. Prerequisite, 9 hours in Psychology or consent of instructor. M W F 10. Not offered in 1965-1966.]

313. PSYCHOLOGY OF LANGUAGE AND THINKING

Fall term. Credit four hours. Prerequisites, six hours of psychology and upperclass standing. M W F 12. Mr. MacLeod.

An approach to the psychological study of thinking through the analysis of the processes of communication. Material will be drawn from studies of linguistic development, from the pathology of language, from comparative linguistics, and from experimental studies of language and thinking. For students of philosophy, language, and literature as well as for students of psychology.

BRAIN MECHANISMS AND MODELS (INTERDEPARTMENTAL COURSE 301-302)

Throughout the year. Credit four hours a term. Prerequisites, calculus, graduate or advanced undergraduate standing, and consent of instructor. Mr. Rosenblatt, with assistance of guest lecturers.

323. PHYSIOLOGICAL PSYCHOLOGY

Fall term. Credit four hours. Prerequisites, Psychology 101, three additional hours of psychology, one year of biology or zoology or physiology, and one term of statistics; one of the prerequisites may be taken concurrently. M 2-3, W 2-4, and a fourth laboratory hour to be arranged.

A survey of research on the physiological bases of behavior.

332. INDUSTRIAL PSYCHOLOGY: PROBLEMS AT WORK

Spring term. Credit four hours. Prerequisites, Psychology 101, 206, or consent of instructor. M W F 9 and laboratory hours to be arranged. Mrs. Smith.

A survey of the external and internal factors which affect the efficiency, speed, and accuracy of human work, and the feelings which accompany it. Consideration will be given to sedentary or "mental" work, in relation to fatigue, monotony, rest,

sleep, and the effects of noise, light, temperature, incentives, and social factors. The effects of the task itself, as in "automated" work, will be considered. The class will obtain experience in such techniques as job evaluation and merit rating, and evaluation of fatigue and effort. Analysis of data and presentation of experimental reports.

333. INDUSTRIAL PSYCHOLOGY: SELECTION AND PLACEMENT

Fall term. Credit four hours. Prerequisite, 332 or consent of instructor. M W F 11 and laboratory hours to be arranged. Mrs. Smith.

Principles of constructing and evaluating selection and placement measures, including development of criteria of performance, analysis of reliability, methods of item-analysis, validation of tests, interviews, and personal history data. Analysis of data and presentation of written reports. Class members will construct and evaluate a specific predictor or criterion measure during the term, and will receive practice in interviewing and administration of aptitude tests.

324. PSYCHOBIOLOGY

Spring term. Credit four hours. Prerequisites, a grade of at least 85 in Psychology 323 and consent of instructor. Two hours of group work and six hours per week of individual laboratory work to be arranged. Mr. Simmons.

The laboratory work will permit the student to master techniques, repeat important experiments, or conduct original work in physiological psychology. In the discussion session, students will present the results of their work or reviews of research in physiological psychology.

325. ABNORMAL PSYCHOLOGY

Fall term. Credit four hours. Prerequisites, nine hours of psychology, or consent of instructor. T Th S 10. Mr. Johnson.

An introduction to the study of disordered behavior. Description of major syndromes, investigations and theories of etiology, and approaches to treatment will be covered in an attempt to introduce the student to major concepts and problems in this area.

326. COMPARATIVE PSYCHOLOGY

Fall term. Credit four hours. Prerequisites, six hours of psychology beyond the 100 level. Some knowledge of physiology or physiological psychology is desirable. Lectures, T Th 11. Laboratory to be arranged. Mr. Zimmerman.

An attempt to uncover the evolutionary and ecological processes at work molding the behavior of animals. Principles will be advanced and used to design representative types of behavior in hypothetical animals. Detailed consideration will then be given to the analysis of the behavior of existing insects, birds, and mammals. Psychological and ethological theories of animal behavior will be discussed, especially the views of these theories toward the evolution of behavior.

335. PSYCHOLOGICAL PROBLEMS OF ADVERTISING AND MARKET RESEARCH

Spring term. Credit four hours. Prerequisite, Psychology 201 or consent of instructor. M 2-4, plus one hour to be arranged. Mr. Hochberg.

Applications of psychological tools and knowledge in the study of advertising and of consumer motivation.

SOCIAL PSYCHOLOGY (SOCIOLOGY 381)

Fall term. Credit four hours. Prerequisites, 3 hours of psychology, 3 hours of sociology, and a course in statistics, or consent of instructor. M W F 10. Mr. Lambert.

Analysis of the history, concepts, methods, and theories used to describe and conceptualize some recurrent processes in social behavior. The processes of socialization, attitude change, and communication will be given special emphasis. Field observation methods, content analysis, attitude measurement and scaling, measures of meaning, and cross-cultural method will be discussed and exemplified. Students will have the opportunity to obtain some experimental laboratory experience. The work of some modern essayists in the field will be critically discussed.

This constitutes one half of a full-year course in social psychology. The other half, which is listed as Psychology 342, may be counted toward the major in sociology. These courses may be taken separately or in either order.

342. SOCIAL PSYCHOLOGY

Spring term. Credit four hours. Prerequisites, 3 hours of psychology, and 3 hours of sociology or 3 hours of anthropology, and a course in statistics, or consent of instructor. M W F 2. Mr. Meltzer.

Analysis of the ways in which people react to one another. The processes of interpersonal influence, conformity to norms and roles, leadership, hostility, and attraction will be given special emphasis. Experimental methods, controlled observation of groups in laboratory settings, and sociometric methods will be critically discussed and exemplified. Students will have opportunity to obtain some experimental laboratory experience.

This constitutes one half of a full-time course in social psychology. The other half, which is listed as Sociology 381, may be counted toward the major in psychology. These courses may be taken separately or in either order.

GROUP DYNAMICS (SOCIOLOGY 384)

Spring term. Credit four hours. Prerequisites, permission of the instructor and a course in either psychology or sociology. M W F 2-3 and M 3-4 or W 3-4. Mr. Longabaugh.

This course should not ordinarily be taken by students who have already had Sociology 381 or Psychology 342.

345. THEORIES OF PERSONALITY

Fall term. Credit four hours. Prerequisite, Psychology 101 or consent of instructor. M W F 12. Mr. Lambert.

A critical survey of the concept of personality in literature, the social sciences, and psychology. A number of the modern specialists will be discussed at some length, and recent empirical and experimental work that has grown out of their thought will be analyzed. The empirical relation of personality notions to some philosophical beliefs and literary production will be considered. The emphasis will be mainly upon "normal" personality.

347. SOCIAL PSYCHOLOGY: INTERPERSONAL INTERACTIONAL THEORY

Fall term. Credit four hours. Prerequisites, C.D. 115 and Sociology 101. T Th S 11. Mr. Longabaugh.

Analysis of the phenomenon of interaction between two people in terms of general approaches to the study of interpersonal behavior: (1) the functions and nature of theory is explicated, (2) Various conceptualizations of interpersonal behavior are presented and compared (a) in terms of their concepts and assertions, and (b) in terms of evidence provided from studies of observed interpersonal interactions; (3) the possible implications of such approaches for the development of a "psychologically based sociology" are suggested.

Primarily for Seniors and Graduate Students

401. PSYCHOLOGICAL TESTING I

Fall term. Credit four hours. Prerequisites, 6 hours in psychology, including 201 or a course in elementary statistics. T Th S 11. Mr. Darlington.

Emphasis is on the logical and mathematical problems in the interpretation, evaluation, and construction of tests. A brief introduction to the major personality tests will be included. No training in administering tests.

402. PSYCHOLOGICAL TESTING II

Spring term. Credit four hours. Prerequisite, Psychology 401 or consent of instructor. T Th S 11. Mr. Darlington.

A more advanced treatment of the topics discussed in Psychology 401.

410. INDIVIDUAL DIFFERENCES AND PERSONALITY

Spring term. Credit four hours. Prerequisites, nine hours of psychology, upperclass standing or consent of instructor. T Th 8:30-10. Mr. Johnson.

Survey of current theory and research in the field of individual differences and personality. A number of lines of investigation will be studied in detail with some emphasis on technique.

412. RESEARCH METHODS IN PERSONALITY AND CLINICAL PSYCHOLOGY

Spring term. Credit four hours. Prerequisites, Psychology 201 and a psychology major, or consent of instructor. M W F 11. Mr. Darlington.

Primary emphasis is on problems related to the use of objective assessment procedures in clinical psychology and personality. Some related topics will also be discussed.

[414. PRACTICUM AND SEMINAR IN PSYCHOLOGICAL TESTING

Spring term. Credit four hours. Prerequisite, Psychology 401 or 402. All students must have consent of instructor. Hours to be arranged. Not given in 1965-1966.]

426. EXPERIMENTAL PSYCHOPATHOLOGY

Spring term. Credit four hours. Prerequisite, Psychology 325 or consent of instructor. M W F 10. Mr. Johnson.

The application of experimental methods to behavior disorders. A survey of current investigations of etiology and treatment with special emphasis upon a scientific approach to pathology.

COMPARATIVE VERTEBRATE ETHOLOGY (AGR.: CONSERVATION 450)

Fall term. Credit three hours. Prerequisites, Conservation 207-208 and permission of instructor. T Th 9 and laboratory to be arranged. Primarily for graduate students; upperclassmen will be accented to capacity of laboratory. Mr. Dilger.

452. INDIVIDUAL AND SOCIETY IN THE SOVIET UNION

Spring term. Credit four hours. Prerequisite, consent of instructor. Will be conducted as a seminar. Hours to be arranged. Mr. Bronfenbrenner.

SEMINAR: THE INDIVIDUAL AND THE FAMILY IN CHINESE SOCIETY (ANTHROPOLOGY 441)

Fall term. Credit four hours. Prerequisites, Anthropology 312 or 343, Psychology 208 or 341, Sociology 382, or consent of instructor. M W F 10. Mr. Wolf.

[461. ADVANCED LEARNING THEORY

Fall term. Credit four hours. Prerequisite, Psychology 306 or permission of the instructor. For upperclassmen and graduate students. M W F 11. Not offered in 1965-1966.]

[462. ADVANCED LEARNING LABORATORY

Spring term. Credit four hours. Prerequisite or corequisite, Psychology 461 or permission of the instructor. For upperclassmen and graduate students. M W F 11. Not offered in 1965-1966.]

466. THEORIES OF VISION

Spring term. Credit four hours. Prerequisite, consent of instructor. T Th S 11. Mr. Hochberg.

Examination of modern explanations of visual cognition, with particular emphasis on problems important to an understanding of central processes and mechanisms.

471-472. STATISTICAL METHODS IN PSYCHOLOGY

Throughout the year. Credit four hours each term. Prerequisites, Psychology 101 or C.D. 115, 201 or consent of the instructor. Psychology 471 is prerequisite to 472. Fall term, M W F 2; Spring term, M W F 2. Mr. Ryan.

An analysis of the methods for treating various kinds of psychological data. Fall term: tests of significance and confidence limits, analysis of variance and correlation. Spring term: complex designs in analysis of variance, analysis of trends and covariance, multiple and curvilinear correlation, introduction to factor analysis.

[476. RESEARCH METHODS IN PSYCHOLOGY—EXPERIMENTAL AND LABORATORY

Fall term. Credit four hours. Prerequisite, consent of instructor. Hours to be arranged. Mr. Simmons. Not offered in 1965-1966.]

477. RESEARCH METHODS IN PSYCHOLOGY—INDUSTRIAL AND FIELD

Spring term. Credit four hours. Prerequisite, Psychology 333 or consent of instructor. T 3-5 plus laboratory hours to be arranged. Mrs. Smith.

An advanced course in research techniques, focussed toward measurement of human behavior in the working situation. Projects in local factories and business institutions and in the laboratory are conducted as exercises in such areas as test construction, analysis of the reliability and validity of tests, studies of the interview process, of morale, learning, methods, and fatigue. Stress will be placed upon both descriptive and evaluative measures, including rating, scaling, and the psychophysical methods, and upon design and sampling for maximal generality of results.

EXPERIMENTAL GROUP DYNAMICS (SOCIOLOGY 481)

Fall term. Credit four hours. Prerequisites, a course in statistics and a course in social or experimental psychology, or consent of instructor. Open to upperclassmen and graduate students. Lectures M W 2. Laboratory hours to be arranged. Mr. Meltzer.

486. SUPERVISED STUDY

Either term. Credit two hours. Staff.

487. SUPERVISED STUDY

Either term. Credit four hours. Staff.

490. SENIOR SEMINAR

Spring term. Credit four hours. Required of all senior students majoring in psychology except those in Honors. T 2-4.

An examination of problems and viewpoints of general psychology in order to organize the specific knowledge gained in other courses. Class discussions will serve as a framework for the student's individual review and reading. The course will culminate in an examination designed to test the student's knowledge of the whole field. Students who have not taken Psychology 212 should be prepared to attend the lectures in that course.

Seminars for Honors Candidates

491. HONORS SEMINAR AND THESIS

Fall term, senior year. Credit four hours. Time to be arranged. Mrs. Doyle.

492. HONORS THESIS

Spring term, senior year. Credit four hours. Time to be arranged.

This will represent an investigation, under the supervision of a member of the staff, of a problem in any of the major fields of psychological research. Candidates will for the most part work independently but may, from time to time, be called together for progress reports.

Graduate Courses and Seminars

Primarily for graduate students, but with the consent of the instructor may be taken by qualified undergraduates. Approximately five graduate courses or seminars will be offered each term, the selection to be determined by the needs of the students. During the preregistration period, the list of courses and seminars for the following term will be posted, specifying instructors, topics to be covered, and hours of meeting.

501-502. GENERAL SEMINAR FOR BEGINNING GRADUATE STUDENTS

Either term. Credit three hours.

511-512. PERCEPTION

Either term. Credit four hours.

513-514. LEARNING

Either term. Credit four hours.

515-516. MOTIVATION

Either term. Credit four hours.

517-518. THINKING

Either term. Credit four hours.

521-522. PSYCHOBIOLOGY

Either term. Credit four hours.

523-524. PHYSIOLOGICAL PSYCHOLOGY

Either term. Credit four hours.

531-532. HISTORY OF PSYCHOLOGY

Either term. Credit four hours.

541-542. STATISTICAL METHODS

Either term. Credit four hours.

543-544. PSYCHOLOGICAL TESTS

Either term. Credit four hours.

545-546. METHODS OF SOCIAL ANALYSIS

Either term. Credit four hours.

547-548. METHODS OF CHILD STUDY

Either term. Credit four hours.

561-562. HUMAN DEVELOPMENT AND BEHAVIOR

Either term. Credit four hours.

571-572. PROSEMINAR IN SOCIAL PSYCHOLOGY

Either term. Credit four hours.

PERSPECTIVES IN SOCIAL PSYCHOLOGY

(See Sociology 581.)

573-574. SOCIAL PSYCHOLOGY

Either term. Credit four hours.

SEMINAR IN SOCIAL PSYCHOLOGY

(See Sociology 681.)

575-576. PERSONALITY

Either term. Credit four hours.

581-582. INDUSTRIAL PSYCHOLOGY

Either term. Credit four hours.

591-592. EDUCATIONAL PSYCHOLOGY

Either term. Credit four hours.

595-596. THE TEACHING OF PSYCHOLOGY

Either term. Credit four hours.

ROMANCE STUDIES

Mr. J-J. Demorest, Chairman; Messrs. F. B. Agard, C. Bandera-Gomez, J. S. Bernstein, G.-P. Biasin, D. Brenes, G. Brogyanyi, Miss Alice Colby, Messrs. P. de Man, H. Dieckmann, R. Durling, J. Freccero, D. I. Grossvogel, R. A. Hall, Jr., E. P. Morris, Mrs. Jean Parrish, Messrs. B. Rideout, K. L. Selig, A. Seznec, and Staff.

The Department of Romance Studies offers courses in French language and literature, Italian language and literature, and Spanish language and literature. For complete course listings and for details of the major programs in French, Italian and Spanish, see those language headings under *Modern Foreign Languages and Literature*.

RUSSIAN LITERATURE

Mr. G. Gibian, Chairman; Miss Patricia Carden; Mr. M. Horwitz, R. H. Whitman.

For complete course listings and for details of the major, see the heading "Russian" under *Modern Foreign Languages and Literatures*.

SEMITIC LANGUAGES AND LITERATURES

Messrs. I. Rabinowitz and A. L. Udovitch.

The Distribution I requirement in the Humanities is satisfied in Hebrew by Hebrew 201 and 302 or 204 and 305.

All Hebrew and Arabic courses may count toward upperclass credit.

Hebrew and Aramaic

101-102. ELEMENTARY CLASSICAL HEBREW

Throughout the year. Credit three hours a term. The first term is prerequisite to the second term. M W F 11. Mr. Rabinowitz.

[201. CLASSICAL HEBREW PROSE

Fall term. Credit three hours. Prerequisite, Hebrew 102. M W F 2. Mr. Rabinowitz. Not offered in 1965-1966.]

204. POST-BIBLICAL HEBREW PROSE (1)

Fall term. Credit three hours. Prerequisites, Hebrew 201, or 3 units of entrance Hebrew and the consent of the instructor. Hours to be arranged. Mr. Udovitch.

Rapid reading of narrative texts in rabbinic, medieval and modern Hebrew.

302. CLASSICAL HEBREW POETRY

Spring term. Credit four hours. Prerequisite, Hebrew 201 or consent of the instructor. M W F 2. Mr. Rabinowitz.

Reading and interpretation of texts selected from the Psalter and the Prophets.

305. POST-BIBLICAL HEBREW PROSE (2)

Spring term. Credit three hours. Prerequisites, Hebrew 204, or four units of entrance Hebrew and consent of the instructor. Hours to be arranged. Mr. Udovitch.

Readings in the Misnah, in medieval theological and philosophical texts, and in the modern essay.

451. ARAMAIC

Fall term. Credit four hours. Prerequisite, Hebrew 201 or consent of the instructor. Hours to be arranged. Mr. Rabinowitz.

Accidence and syntax of Western Aramaic; reading of the Aramaic passages of the Bible, the Qumran Genesis Apocryphon, and selections from the Targums to the Pentateuch and the Prophets.

Arabic

105-106. ELEMENTARY CLASSICAL ARABIC

Throughout the year. Credit three hours a term. The first term is prerequisite to the second term. Hours to be arranged. Mr. Udovitch.

THE LITERATURE OF THE OLD TESTAMENT

(See Comparative Literature 205.)

THE LITERATURE OF POST-EXILIC JUDAISM

(See Comparative Literature 206.)

SOCIOLOGY

Mr. G. F. Streib, Chairman; Messrs. C. Ackerman, L. Churchill, A. G. Feldt, Mrs. Rose K. Goldsen, Messrs. D. P. Hayes, W. W. Lambert, A. H. Leighton, R. Longabaugh, R. M. Marsh, R. McGinnis, L. Meltzer, G. C. Myers, J. M. Stycos, W. E. Thompson, R. M. Williams, Jr.

There are three alternative majors available: (1) sociology, (2) sociology with a concentration in social psychology, (3) social relations. A student planning to major should ordinarily complete the Distribution I requirements by the end of the sophomore year.

SOCIOLOGY

For a major in sociology the following courses must be completed: (a) 321, 330, 381 (or Psychology 342), 402, and 441; (b) twelve hours of electives at the 300 level or higher, including at least one course at the 400 level, four hours of which must be in sociology. Departmentally approved courses in other fields may be elected in consultation with the major adviser.

As prerequisite for a major in sociology, students should normally offer Sociology 101-202, although Sociology 101 and an additional 200-level course is acceptable. In addition, the student must offer an approved course in statistics to be taken not later than the end of the junior year but preferably as a sophomore. For admission to the major a student must have an average of at least 75 in the prerequisite departmental courses and must be accepted by the departmental admissions committee. Ordinarily, students should apply for admission to the major no later than two weeks before the time of preregistration in the spring term.

Students planning to major are urged to take a year of college mathematics.

SOCIOLOGY WITH A CONCENTRATION IN SOCIAL PSYCHOLOGY

In cooperation with the Department of Psychology, a concentration in social psychology is available. Students who wish to specialize in social psychology may major in either field. In sociology, the student who concentrates in social psychology must meet the prerequisites for a major in sociology

(offering Psychology 201 to meet the statistics prerequisite). He must meet major requirements (a), and he also must meet requirements (b) by offering the following: Psychology 342 and one of the following: Anthropology 265; Sociology 384, 481, 582, 681; Psychology 345, 347, 571, 573, 574. In addition, the student is expected to take one course in experimental psychology (Psychology 305, 306, or 307).

SOCIAL RELATIONS

The major in social relations is offered jointly by the Department of Anthropology and the Department of Sociology. The major provides the student with basic competence in cultural anthropology, social psychology, and sociology, while giving particular emphasis to the common methods of research in these disciplines. The student electing this major is expected to obtain a grasp of the common interests and evidence of these disciplines as well as knowledge of their unique insights in attempting to develop generalizations regarding man in society. The student's work is integrated in his senior year when he takes the social relations seminar in which he is expected to interrelate aspects of the theory and data of the three disciplines.

(1) Prerequisites to the major: The candidate must apply to the Committee on Admission to the Social Relations Major, offering the following:

a. Either Anthropology 101 or Sociology 101.

b. Either Psychology 101 or C. D. 115 or Sociology 281.

c. Either Industrial and Labor Relations 210 or Psychology 201 (the latter is recommended for the student who intends to take advanced courses in psychology).

(2) The major: The major calls for a minimum of 36 hours of course work as follows:

a. Three pairs or other combinations of related courses at the 300 level or above, to be selected in consultation with the major adviser. These six courses must include two courses from each of the following disciplines: anthropology, social psychology, sociology.

b. At least one course in methods, to be selected from the following: anthropological methods, techniques of experimentation (psychology), methods in sociology, advanced psychological statistics, the philosophy of science or of social science, advanced statistics (such as Industrial and Labor Relations 510).

c. At least one course in theory which is related to social relations.

d. The senior seminar in social relations (Sociology 495, or Anthropology 495).

A list of the courses which may be used to satisfy the requirements for a major in social relations is available from any of the major advisers.

Students seeking admission to the Honors program in social relations should apply to the Chairman of the Social Relations Committee, Robin M. Williams, Jr.

For admission to Honors Programs in sociology and social psychology students should file application on a form obtainable in the departmental office, not later than November 1 of their junior year. Honors candidates

must have a general average of at least 80 and an average in departmental courses of at least 85, or show exceptional promise.

Specialized instruction is offered in Sociology 491-492, Selected Topics in Sociology. These courses are open to a limited number of upperclass majors only. Consent of the instructor is required.

Seminars may be taken by qualified undergraduates, with the consent of the instructor, except as otherwise noted in course listings.

The Distribution I requirement in Social Sciences is satisfied in sociology by Sociology 101 and an additional semester course at the 200 or 300 level.

101. MAN AND SOCIETY

Either term. Credit three hours. Fall term: lectures, T Th (S) 10. Spring term: lectures, M W (F) 10. Discussion sections to be arranged. Mr. Hayes and Staff.

An introduction to the principal questions, perspectives, and methods of sociology. The focus of the course will be upon the processes which maintain the continuity and stability of society and contribute to its change. Detailed analyses will be made of institutions and organizations, socialization and social control. Emphasis will be given to contemporary research in these areas.

202. GENERAL SOCIOLOGY

Spring term. Credit three hours. Prerequisite, Sociology 101. T Th S 10. Mr. Hayes.

A continuation of Sociology 101. Introducing social psychology, demographic analysis, human ecology, deviance, and social disorganization, and the methodological issues and problems of various fields. Primary sources in each of the fields will serve as the readings for this course.

204. GENERAL INTRODUCTION TO BEHAVIORAL SCIENCE

Spring term. Credit three hours. M W F 2. Mr. Leighton.

Planned both for students intending to specialize in behavioral science and for those with more general interests. The approach will be selective, illustrative, and integrative, with emphasis on the development of theory through work on both human and animal behavior. It will deal first with the behavior of the individual, next with society as a system, and finally, with the practical applications and contributions of behavioral science.

262. PUBLIC OPINION

Spring term. Credit three hours. M W F 11. Mrs. Goldsen.

Factors determining the character of public opinion on the basis of relevant social, psychological, and political science knowledge. The nature, development, and control of public opinion in terms of opinion formation and change and the relation of public opinion to social and political action. The role of the communication media of radio, television, press, and motion pictures in determining public opinion.

264. INTERGROUP RELATIONS: PREJUDICE, DISCRIMINATION, AND CONFLICT

Spring term. Credit three hours. Prerequisite, Sociology 101 or consent of the instructor. T Th S 11. Mr. Williams.

An evaluation of relations among ethnic, racial, and religious groups in terms of the social psychology of intergroup hostility and conflict and the position and role of

these groups in the larger community. Prejudice and discrimination will be analyzed for their social, psychological, political, and economic causes and effects. Social and political movements based on intolerance and efforts to resolve intergroup conflict will be examined, with special attention to current developments resulting from the desegregation of public schools.

281. THE SOCIAL PSYCHOLOGY OF GROUPS

Fall term. Credit three hours. Prerequisite, a course in sociology or consent of instructor. M W F 11. Mr. Meltzer.

Analysis of the structure of groups and group processes in terms of contemporary social psychological and sociological frames of reference. Survey of the findings of research from field and laboratory settings, and an analysis of observational, survey, and experimental methods of research bearing upon groups.

321. TECHNIQUES OF SOCIOLOGICAL RESEARCH

Fall term. Credit four hours. Prerequisites, Sociology 101 and a course in statistics, or consent of the instructor. M W F 11. The hours for a research practicum to be arranged. Mr. Churchill.

Strategies in the framing and testing of sociological hypotheses are considered. Data sources and test procedures are evaluated. Data-gathering techniques are studied and applied in a practicum.

330. POPULATION PROBLEMS

Spring term. Credit four hours. M W 12, and one hour to be arranged. Mr. Stycos.

The practical and scientific significance of population growth and composition. Fertility, migration, and mortality in relation to social and cultural factors and in relation to questions of population policy. National and international data will receive approximately equal emphasis.

[331. URBAN COMMUNITIES

Fall term. Credit four hours. Prerequisite, Sociology 101 or consent of the instructor. T Th S 11. Mr. Thompson. Offered in alternate years. Not offered in 1965-1966.]

342. EDUCATIONAL SOCIOLOGY

Spring term. Credit four hours. Prerequisite, Sociology 101 or consent of the instructor. T Th S 11. Mr. Thompson.

An examination of educational institutions in the context of contemporary culture and society, emphasizing the dynamics of school-community relationships. The study of educational institutions as social systems will also be included.

343. THE FAMILY

Fall term. Credit four hours. Prerequisite, Sociology 101 or consent of the instructor. M W F 9. Mr. Streib.

The family in various cultures but particularly in American society, from the standpoint of its organization and relation to other social institutions. Emphasis is placed upon the family's major social functions (reproduction, maintenance, socialization, and the conferring of status) and upon the cyclical features of the family (courtship, marriage, parenthood, and dissolution).

344. RELIGION IN WESTERN SOCIETY

Spring term. Credit four hours. Prerequisite, Sociology 101 or consent of the instructor. M W F 9. Mr. Streib.

The interrelationship of culture, society, and religion. Religion and social stratification, religion and economic and political institutions, social change and religion. The major emphasis will be upon American society and American religious institutions.

[345. CLASS, STATUS, AND POWER

Fall term. Credit four hours. Prerequisite, Sociology 101 or consent of the instructor. M W F 11. Mr. Marsh. Not offered in 1965-1966.]

347. BUREAUCRACY IN MODERN SOCIETY

Fall term. Credit four hours. Prerequisite, Sociology 101 or consent of the instructor. T Th S 10.

Study of the nature, conditions for growth, and consequences of bureaucratic organizations in modern Western societies, especially the United States. Structure and operation of organizations having diverse functions in modern society, such as business corporations, trade unions, the military, political-interest groups and parties, hospitals, and government agencies. Implications of bureaucracy for effective organizational functioning, for the organizational members, their families, the communities in which they live, and, especially, for conflicts in values within the individualistic, democratic, and humane traditions of American society.

348. POLITICAL SOCIOLOGY

Spring term. Credit four hours. Prerequisite, Sociology 101 or consent of the instructor. M W F 10.

An examination of political institutions as sociological phenomena with emphasis on the empirical study of political behavior. Cultural and social factors associated with political structure, political attitudes, and political behavior. Political decision making as a sociological process.

350. COMPARATIVE SOCIAL STRUCTURE

Spring term. Credit four hours. Prerequisite, Sociology 101. M W F 11. Mr. Marsh.

Structural-functional analysis of the constant and variable features of large-scale industrial and pre-industrial societies, such as China, Japan, the Soviet Union, and the United States. The universality of sociological propositions, originally tested with American data, in the light of data from other societies.

351. SOCIOLOGY OF DEVIANCE

Fall term. Credit four hours. Prerequisite, a course in Sociology. T Th S 10. Mr. Ackerman.

Juvenile delinquency and lower class gangs, rate-busting and chiselling, political apathy and negativism, are examined in the context of "action" theory. The psychological concepts of "sex-identity crisis," "dissonance," and "status envy" are analyzed, along with the sociological concepts of "anomic" and "alienation."

362. SOCIETY AND ECONOMIC DEVELOPMENT

Spring term. Credit four hours. Prerequisite, Sociology 101 or consent of the instructor. M W F 10. Mr. Ackerman.

Applies sociological concepts and theories of historical development of Western industrial societies to selected problems. Locates patterns and variations in relationships between economic development of societies and changes in their (1) population and ecology, (2) family and kinship systems, (3) community and administrative organizations, (4) stratification, (5) political systems, (6) communications media, and (7) institutionalized ideologies.

363. MASS SOCIETY, POLITICS, AND CULTURE

Spring term. Credit four hours. Prerequisite, Sociology 101 or consent of the instructor. M W F 12. Mr. Ackerman.

Within the general study of collective behavior, the nature of "mass society" in contrast to other forms, its historical conditions and its consequences, for, especially, politics and government will be considered.

381. SOCIAL PSYCHOLOGY

Fall term. Credit four hours. Prerequisites, 3 hours of psychology and 3 hours of sociology or 3 hours of anthropology, and a course in statistics or consent of the instructor. M W F 10. Mr. Lambert.

Analysis of the history, concepts, methods, and theories used to describe and conceptualize some recurrent processes in social behavior. The processes of socialization, attitude change, and communication will be given special emphasis. Field observation methods, content analysis, attitude measurement and scaling, measures of meaning, and cross-cultural method will be discussed and exemplified. Students will have the opportunity to obtain some experimental laboratory experience. The work of some modern essayists in the field will be critically discussed.

This course constitutes one half of a full-year course in social psychology. The other half, which is listed as Psychology 342, may be counted toward the major in sociology. These courses may be taken separately.

384. GROUP DYNAMICS

Spring term. Credit four hours. Prerequisites, permission of the instructor and Psychology 101 and Sociology 101. This course should not normally be taken by students who have already taken Psychology 342. M W 2, and M 3 or W 3. Mr. Longabaugh.

A description and analysis of the relationship between individuals and groups. Two dimensions are analyzed interdependently: the properties of groups and their effects on individuals, and the individual as a group participant and his effect on the group. Among topics included are group structure, processes, and roles; interaction, social perception, and choice; personality input and output. This course departs from the more traditional course structure. The context for learning is provided by the group itself. Each group has two main functions: (1) to interrelate readings, lectures, and the experiences provided by the group participation; (2) to extrapolate hypotheses from this information and attempt to evaluate their fertility through the observation of a second class group.

SOCIAL PSYCHOLOGY (PSYCHOLOGY 342)

Spring term. Credit four hours. Prerequisite, 3 hours of psychology and 3 hours of sociology, and a course in statistics, or consent of instructor. M W F 2. Mr. Meltzer.

Analysis of the ways in which people react to one another. The processes of interpersonal influence, conformity to norms and roles, leadership, hostility, and attraction will be given special emphasis. Experimental methods, controlled observation of groups in laboratory settings, and sociometric methods will be critically discussed and exemplified. Students will have opportunity to obtain some experimental laboratory experience.

This course constitutes one half of a full-year sequence in social psychology. The other half, which is listed as Sociology 381, may be counted toward the major in psychology. These courses may be taken separately.

THEORIES OF PERSONALITY (PSYCHOLOGY 345)

Fall term. Credit four hours. Prerequisite, Psychology 101 or consent of instructor. M W F 12. Mr. Lambert.

402. SOCIAL THEORY

Spring term. Credit four hours. Open to majors and graduate students. M W 2 and one hour to be arranged. Mr. Myers.

Survey of selected theories and concepts in contemporary sociology reviewed in historical perspective, in relation to the contributions of other social sciences, and in terms of present-day developments in theory and research. Throughout, emphasis will be placed on trends in contemporary social theory.

404. STUDIES IN SOCIOLOGY

Spring term. Credit four hours. T Th 10-11:30. Mr. Churchill.

A limited number of problems in sociology that have received consistent theoretical and research attention are explored. Analysis and interpretation of selected literature in the field.

412. MATHEMATICAL SOCIOLOGY

Spring term. Credit four hours. Prerequisites, Sociology 101 and one year of college mathematics, or consent of the instructor. Th 2-4 and one additional hour. Mr. McGinnis.

Elementary mathematics as applied to sociological theory. Both deterministic and probabilistic models are considered. Stochastic probability processes are emphasized in relation to theories of social change.

421. MEASUREMENT THEORY IN SOCIAL ANALYSIS

Fall term. Credit four hours. Prerequisites, Sociology 321 and an introductory course in college mathematics or statistics or consent of the instructor. M W F 2. Mr. Churchill.

Elementary measurement theory is examined as a basis for constructing social variables. Guttman's ordinal scale theory is considered in detail. Equal-interval measurement techniques of psychophysics are applied to other concepts such as social perception, status, and anomie. Factor analysis is evaluated as a tool of theory and research.

423. ANALYSIS OF SURVEY DATA

Fall term. Credit four hours. Open to upperclass majors and graduate students with the consent of the instructor. Th 4-6. Laboratory period to be arranged. Mrs. Goldsen.

In the first semester, instruction and practice are given in all steps of survey analysis, using materials from current studies conducted in the Department. Treatment of editing, classifying, and coding data. Review and application of basic statistical techniques. Scales, scores, and other composite indexes are developed and used in analysis. Continuous emphasis is given to adequacy of research design and logic of analytical inference. All exercises are written by the students as research reports.

424. ANALYSIS OF SURVEY DATA

Spring term. Credit four hours. Open to upperclass majors and graduate students with the consent of the instructor. Th 4-6. Laboratory period to be arranged. Mrs. Goldsen.

This is the continuation of Sociology 423. The second semester emphasizes the equivalent problems which arise in analyzing qualitative research materials, unstructured interviews, content analysis of documents, life history materials, and the like.

425. TECHNIQUES OF DEMOGRAPHIC RESEARCH

Fall term. Credit four hours. Prerequisite, Sociology 330 or consent of the instructor. T Th S 11. Mr. Myers.

Methods of processing and analyzing demographic data. Measures of mortality, fertility, and migration as applied to census and vital statistics data will be analyzed, and the more general applications of demographic techniques to other classes of data illustrated.

426. REGIONAL POPULATION ANALYSIS

Spring term. Credit four hours. Prerequisite, Sociology 330 or consent of the instructor. M W F 11. Mr. Myers.

Research application of basic demographic techniques to selected regions of the world, particularly the economically less-developed regions. Attention is directed to field survey techniques, including sampling and questionnaire construction, as well as formal demographic analysis. Students may work on selected research projects for the semester.

433. INTERNATIONAL URBANIZATION

Fall term. Credit four hours. M W F 12. Mr. Feldt.

An examination and appraisal of the growth and development of urban communities in developing nations. The structure and composition of such communities and their relationship to a regional economy are compared with similar phenomena in the Western world.

434. INTRODUCTION TO HUMAN ECOLOGY

Spring term. Credit four hours. T Th 2-3:30. Mr. Feldt.

An examination of the form and development of the human community with respect to spatial, temporal, and functional patterns of organization. Demographic, environmental, and technological characteristics are treated as parameters relevant to the ecological structure of the community.

441. STRUCTURE AND FUNCTIONING OF AMERICAN SOCIETY—I

Fall term. Credit four hours. Prerequisite, Sociology 101 or consent of the instructor. T Th S 9. Mr. Williams.

Systematic analysis of the major institutions of kinship, stratification, economic activity, political structure, education, and religion. Special attention is given to values and their interrelations in the modern social order. A survey of the more important types of groups and associations making up a pluralistic nation is included.

442. STRUCTURE AND FUNCTIONING OF AMERICAN SOCIETY—II

Spring term. Credit four hours. Prerequisite, Sociology 441 or consent of the instructor. T Th S 9. Mr. Williams.

Primary attention is directed to the study of interrelations of institutions, including analysis of the regulation of economic and political systems. Group cooperation and conflict are surveyed. Analysis of important processes of change in institutions, values, and social organizations.

444. SOCIAL STRATIFICATION PROSEMINAR

Spring term. Credit four hours. T 2-4. Mr. Marsh.

481. EXPERIMENTAL GROUP DYNAMICS

Fall term. Credit four hours. Prerequisites, a course in statistics and a course in social or experimental psychology, or consent of the instructor. Open to upperclassmen and graduate students. M W 2. Laboratory hours to be arranged. Mr. Meltzer.

An introduction to the advanced literature of the field, and supervised research experience. Students will read and discuss technical reports of experimental studies of social interaction, as well as pertinent theoretical articles. The focus will be upon analytic and experimental research on the concepts of social power and social exchange in interpersonal relationships.

491. SELECTED TOPICS IN SOCIOLOGY

Fall term. Credit four hours. Open only to majors. Hours to be arranged. Staff.

492. SELECTED TOPICS IN SOCIOLOGY

Spring term. Credit four hours. Open only to majors. Hours to be arranged. Staff.

493. HONORS SEMINAR

Fall term. Credit four hours. Prerequisite, acceptance as candidate for Honors. Hours to be arranged. Mr. Feldt and Staff.

494. HONORS SEMINAR

Spring term. Credit four hours. Prerequisite, acceptance as candidate for Honors. Hours to be arranged. Mr. Feldt and Staff.

495. SOCIAL RELATIONS SEMINAR

Fall term. Credit four hours. Open only to seniors majoring in social relations. Hours to be arranged.

511. THEORY OF CULTURE AND SOCIAL ORGANIZATION

Fall term. Credit four hours. Prerequisite, Sociology 402 or equivalent. T Th S 11. Mr. Williams.

Analysis of recent conceptual development in theories of cultural and social systems. Special attention will be given to the work of Talcott Parsons and associates, with comparative study of alternative conceptual schemes.

[512. HISTORY OF SOCIOLOGICAL THEORY

Spring term. Credit four hours. Open to majors and graduate students. T Th 2-3:30. Mr. Marsh. Not offered in 1965-1966.]

513. DEMOGRAPHIC THEORY

Fall term. Credit four hours. Open to majors and graduate students. T 4-6. Mr. Myers.

Deals with theory construction, hypothesis derivation, and the integration of theory and research in demography. Although emphasis is placed on contemporary theories, earlier formulations beginning with Malthus also are examined insofar as they deal with fertility, mortality, migration, and the people-resource question.

[514. PROSEMINAR IN COMPARATIVE BUREAUCRACY

Spring term. Credit four hours. Hours to be arranged. Not offered in 1965-1966.]

522. METHODOLOGY

Spring term. Credit four hours. Prerequisite, an introductory methods and statistics course or consent of the instructor. F 2-4 and M 4. Mr. McGinnis.

Science is considered as a model process, both axiomatic and experimental. Sociology is evaluated as a partial representation of the model. The logical status of sociological knowledge is emphasized.

[523. SEMINAR: STOCHASTIC PROCESSES IN SOCIOLOGY

Fall term. Credit four hours. Prerequisites, one year of college mathematics and one term of statistics, or consent of the instructor. Hours to be arranged. Mr. McGinnis. Not offered in 1965-1966.]

524. SEMINAR: SOCIOLOGICAL APPLICATION OF GAME AND DECISION THEORY

Fall term. Credit four hours. Prerequisites, one year of college mathematics and one term of statistics, or consent of the instructor. T Th 9-11. Mr. McGinnis.

N-person zero and non-zero sum games are interpreted as representations of social exchange behavior. Applications to such diverse phenomena as task-oriented, small-group interaction and social-control mechanisms are studied.

541. SOCIAL ORGANIZATION AND CHANGE

Fall term. Credit four hours. T Th 2-3:30. Mr. Ackerman.

An analysis of major problems in theory and research in the general field of social organization and change. The subject will be studied from the standpoint of the nature and size of the social system (small groups, communities, large-scale organizations, societies) and also in terms of the social processes and properties of the system, such as integration, authority, conformity, and deviance.

581. PERSPECTIVES IN SOCIAL PSYCHOLOGY

Fall term. Credit four hours. M W 4-5:30. Mr. Longabaugh.
Critical analysis of the major current perspectives in social psychology.

PROSEMINAR IN SOCIAL PSYCHOLOGY (PSYCHOLOGY 571-572)

611. SEMINAR: THEORY AND RESEARCH

Fall term. Credit four hours. Hours to be arranged. Mr. Hayes.
Research on Interaction and Social Structure.

612. SEMINAR: CONTEMPORARY RESEARCH IN DEMOGRAPHY

Spring term. Credit four hours. T 4-6. Mr. Stycos.
Critical analysis of recent research investigations in demography.

613. SEMINAR: THEORY AND RESEARCH

Fall term. Credit four hours. W 2-4. Mr. Williams.
Critical analysis of research in intergroup relations.

614. SEMINAR: THEORY AND RESEARCH IN CHINESE SOCIAL STRUCTURE

Spring term. Credit four hours. Hours to be arranged. Mr. Marsh.

615-616. DIRECTED RESEARCH

Either term. Credit to be arranged. Hours to be arranged. Staff.

617. SEMINAR: THEORY AND RESEARCH

Fall term. Credit four hours. W 9-12. Mr. McGinnis and Staff.
Social system analysis.

618. SEMINAR: THEORY AND RESEARCH

Spring term. Credit four hours. W 9-12. Mr. McGinnis and Staff.
Social system analysis.

619. SEMINAR: THEORY AND RESEARCH

Fall term. Credit four hours. F 2-4. Mr. Thompson.
Critical examination of topics in the sociology of education.

620. SEMINAR: THEORY AND RESEARCH

Spring term. Credit four hours. Hours to be arranged.

621. SEMINAR: THEORY AND RESEARCH

Fall term. Credit four hours. Hours to be arranged.

[681. SEMINAR IN SOCIAL PSYCHOLOGY

Spring term. Credit four hours. Hours to be arranged. Mr. Lambert. Not offered in 1965-1966.]

SPEECH AND DRAMA

Mr. G. A. McCalmon, Chairman; Messrs. H. D. Albright, J. P. Bakke, G. E. Beck, M. A. Carlson, Miss Ruth Anne Clark, Miss Anne Gibson, Messrs. R. Murphy, R. Robertson, J. F. Wilson, and Staff.

The Department of Speech and Drama offers a broad and varied curriculum in the arts and sciences that relate to oral communication and interpretation. The aim of the Department is to provide sound preparation for those who would understand speech as a liberal art and for those who will later make use of it in a variety of careers in such areas as law, teaching, business administration, and educational and community theatre.

Students may elect a major with emphasis on either speech or drama. All majors must complete the following underclass courses: 233, either 103-104 or 105-106 or equivalent, and one course from 205, 234, 285. Twenty additional hours of upperclass work in the Department are required of all majors.

Courses to be completed outside the Department but as an integral part of the major are as follows. Majoring students who concentrate in speech must complete (a) at least four hours of upperclass course work in linguistics or psychology of language and thinking, and (b) at least eight additional hours of approved upperclass course work in psychology, history, or literature. Those concentrating in drama must elect at least twelve hours of approved upperclass work in dramatic literature, history of art, sociology, anthropology, or psychology.

Students wishing to graduate with Honors in speech and drama should make application to the Chairman at the beginning of their junior year. For provisional acceptance as a candidate for Honors, a student must have chosen speech or drama as his major, have a cumulative average of 80 for all work done in the College, and have no grades below 80 for courses in speech and drama.

The Distribution I requirement in the Expressive Arts is satisfied in speech and drama by Speech and Drama 103-104 or 105-106.

For satisfaction of Distribution II requirements, the Department suggests as representative the following paired or sequential courses: 233-234, 273-373, 283-285, 301-302, 375-376, 391-392, 401 and either 402 or 413. Representative four-course combinations are: 273-373-391-392, 283-285-381 and 385 or 386, 301-302-401 and 402 or 413.

Students who plan to teach speech and drama in the secondary schools should secure from the departmental office the schedule of courses approved for provisional certification in New York State. For those planning to teach English the Department recommends Courses 233, 281, 283, 285, 301.

103-104. PUBLIC ADDRESS AND DRAMA AS PERFORMING ARTS

Throughout the year. Credit three hours a term. First term prerequisite to the second. M W F 11. Course 103, Messrs. Wilson and Bakke. Course 104, Mr. Robertson.

An introduction to oral and dramatic communication through intensive practice in public address and acting. The work is developed through a series of performance

units, each related to a specific cluster of principles governing the projection of meaning, rhetorical or dramatic. The student is required to generalize from both immediate experience and theoretical analysis and to deal ultimately with the bases of criticism in rhetorical and dramatic arts.

The first term, devoted primarily to public speaking, explores problems of audience analysis, discovery, and arrangement of ideas, language choice, and delivery. The second term begins with the reading of imaginative material from the printed page, covers the adaptation of speech and action to the special requirements of the stage, and focuses on characterization in projects of increasing complexity and scope.

Intended primarily for students in the College of Arts and Sciences. Not open to students who have taken Speech and Drama 105-106, or 201.

105-106. PRINCIPLES OF SPEECH AND THEATRE ARTS

Throughout the year. Credit three hours a term. First term prerequisite to the second. T Th S 10. First term, Mr. Wilson. Second term, Mr. Albright.

An introduction to oral communication exploring the limitations and potentialities of speech, particularly in public address and the drama. The first term examines how and why man speaks, with special attention to utterance and rhetorical composition as social instruments. The second term enlarges the scope of the basic material, developing speech and action as essential elements in dramatic communication and introducing such additional considerations as scenic design and space relationships within the playhouse.

Not a performance course; lectures, readings, discussions, and demonstrations. Not open to students who have taken Speech and Drama 103-104.

300. INDEPENDENT STUDY IN SPEECH AND DRAMA

Either term. Credit four hours. Open to upperclassmen prepared for independent study in speech or drama. Permission to register must be secured through the departmental office. Members of the Department.

Individual study of special topics. Students who plan to teach speech and drama are expected to complete certain advanced work in teaching methods through independent study under supervision of an appropriate adviser.

Speech

201. PUBLIC SPEAKING

Either term. Credit three hours. Not open to students who have taken Speech and Drama 103. Open to others who have satisfied the introductory English requirements of their respective colleges. M W F 8, 9, 10, 11, 12; T Th S 9, 10, 11. Messrs. Wilson, Bakke, Miss Clark, and Staff.

Evening examinations will be given on Tuesday, November 2, and Tuesday, March 22.

Designed to help the student communicate his ideas and convictions effectively in oral discourse. Study of basic principles of expository and persuasive speaking, with emphasis on finding, evaluating, and organizing materials, and on simplicity and directness in style and delivery. Practice in preparing and delivering speeches of various types on current issues and in chairmanship; study of examples; conferences.

Students whose native language is not English must obtain special clearance from the Department before registering.

205. DISCUSSION

Either term. Credit four hours. Not open to freshmen. M W F 10. Messrs. Wilson and Bakke.

Study of principles and methods of oral communication in small groups, especially informal, problem-solving conferences. Practice in round-table, committee, and panel deliberation. Independent reading on problems of communication and principles of investigation, analyzing, and presenting problems of fact, value, and policy.

211-212. INTERCOLLEGIATE DEBATE

Both terms. Credit one hour per term. May be repeated for credit, but no student may earn more than four hours of credit applicable towards graduation. Participation is not limited to those enrolled for credit. T 7:30-9:00 p.m. Miss Clark.

Practice in standard style, parliamentary, and cross-examination debating, and in other forensic activities.

233. ENGLISH PHONETICS

Spring term. Credit three hours. M W F 9.

A study of the physiological and acoustic principles of speech sound classification using the International Phonetic Alphabet. Application of these principles to the identification, production, and general analysis of American English as a system of oral communication.

[234. SURVEY OF SPEECH DISORDERS

Not offered in 1965-1966.]

301. ARGUMENT

Either term. Credit four hours. Open to upperclassmen and to underclassmen who have taken Speech and Drama 103, 105, or 201. M W F 9. Mr. Murphey.

Study of the principles of reasoning and motivation in persuasive oral discourse. Topics to be considered: investigation and analysis of issues, types and tests of evidence, and reasoning as applied in discussion of public questions, methods of proof, and refutation.

Practice in analysis of supporting materials, in speech composition, and in standard style and cross-examination debating.

302. PERSUASION

Spring term. Credit four hours. Open to upperclassmen who have taken Speech and Drama 103, 105, or 201. M W F 9. Mr. Bakke.

Advanced study of the speech designed to affect attitudes and beliefs and to induce action. Study of the theories of persuasion with special attention to the logic, language, and structure of audience-centered persuasive discourse. Practice in the composition and delivery of persuasive speeches related to varied purposes, audiences, and propositions.

345. BASES OF SPEECH BEHAVIOR

Fall term. Credit three hours. Open to upperclassmen and to underclassmen who have taken Speech and Drama 103, 105, or 201. M W F 11. Miss Clark.

Designed to afford a comprehensive and integrated view of speech as a human

behavior. Study of intrapersonal and interpersonal purposes of speech and of elements of communicative process by means of speech.

401. FORMS OF PUBLIC ADDRESS

Fall term. Credit four hours. For upperclassmen and graduates. T Th 11-12:15. Mr. Wilson.

Study of style in various forms of public address: legislative, legal, ceremonial, campaign, sermon. Speeches illustrating the forms of address will be drawn from the works of Burke, Webster, Lincoln, F. D. Roosevelt, Churchill, and others. Some practice in speech composition, oral and written.

402. PSYCHOLOGY OF PERSUASIVE DISCOURSE

Spring term. Credit four hours. For upperclassmen and graduates. T Th 11-12:15. Miss Clark.

Lectures, readings, and research reports on theories of persuasion. Topics considered will include persuasive paradigms, research relevant to selection of persuasive appeals and arguments, implications for persuasion of cognitive balance models, and ethics of persuasion.

[411. PUBLIC ADDRESS IN HISTORICAL PERSPECTIVE: 1350-1750

Not offered in 1965-1966.]

412. PUBLIC ADDRESS IN HISTORICAL PERSPECTIVE: 1750-1860

Spring term. Credit four hours. Open to upperclassmen and graduate students who have had one of the following: Speech and Drama 103, 105, 201 or the equivalent; six hours of English history or American history. M W F 12. Mr. Wilson.

Critical study of the settings, content, and persuasive influence of significant public addresses. Special attention will be given to speeches treating the American and French revolutions, ratification of the Constitution of the United States, the Napoleonic wars, religious and ethical idealism, economic nationalism, slavery and the Civil War. Addresses by Burke, Pitt, Fox, James Wilson, Hamilton, Cardinal Newman, Emerson, Webster, Cobden, Disraeli, Wilberforce, and Wendell Phillips will be among those studied. Lectures, readings research papers.

[413. PUBLIC ADDRESS IN HISTORICAL PERSPECTIVE: 1860-1965

Not offered in 1965-1966.]

501-502. SEMINAR IN RHETORICAL THEORY

Throughout the year. Credit four hours a term. M 2-4:30. Mr. Murphey.

In the first term consideration will be given to theories of rhetorical practice; in the second term, to applications of rhetorical theory in the criticism of public address.

510. EXPERIMENTAL RESEARCH METHODS IN SPEECH

Spring term. Credit four hours. Open to students who have taken Speech and Drama 103 or 105 or by consent of the instructor. T 2-4:30. Miss Clark.

Introduction to quantitative measurements applicable to speech problems. Emphasis on the design and evaluation of experiments, illustrated by current research in speech.

620. THESES AND SPECIAL PROBLEMS IN RHETORIC AND PUBLIC ADDRESS

Either term. Credit and hours to be arranged. Messrs. Wilson, Bakke, Miss Clark.

Open to graduate candidates working on theses and to other graduates prepared for independent study of special topics in rhetoric and public address.

The Department calls attention to three prizes in public speaking, competition for which will be open in the spring term: The Woodford Prize for seniors; the Class of 1894 Memorial Prize in Debate for juniors and seniors, the Class of 1886 Memorial Prize in Public Speaking for sophomores and juniors.

Drama

260-261. REHEARSAL AND PERFORMANCE

Hours to be arranged. First meeting in Lincoln B-9 at 7:30 p.m. on first day of instruction. Mr. Robertson.

262-263. MANAGEMENT

Hours to be arranged. First meeting in Lincoln B-9 at 7:30 p.m. on first day of instruction. First term, Mr. McCalmon. Second term, Mr. Albright.

264-265. TECHNICAL THEATRE

Hours to be arranged. First meeting in Lincoln B-9 at 7:30 p.m. on first day of instruction. Miss Gibson.

Each of the above courses offered throughout the year. Credit one hour a term. Consent of the instructor required; admission by audition only. May be repeated for credit, but no student may earn more than six hours of credit applicable towards graduation. Acting, managerial, and technical responsibilities in productions of the University Theatre and/or Studio programs under the direction of the Cornell University Theatre staff. Participation in program also open to students without credit.

271. INTRODUCTION TO THEATRE ART

Spring term. Credit three hours. Not open to freshmen or to students who have taken Speech and Drama 106. M W F 9. Mr. Carlson.

A survey of the elements of dramatic communication intended to develop appreciation and rational enjoyment of the theatre in all its forms. This is not a production course, and no experience in dramatic production is required. Lectures, readings, demonstrations, and field trips.

[273. THE PUBLIC ARTS: FILM, RADIO, AND TELEVISION

Not offered in 1965-1966.]

281. ORAL INTERPRETATION OF LITERATURE

Fall term. Credit three hours. Not open to freshmen. M W F 9. Mr. Beck.

An introductory course intended to help the student communicate accurately and expressively in reading aloud. Study of principles and criteria of good reading; analysis and delivery of selected materials from prose, poetry, and drama.

283. ACTING

Fall term. Credit three hours. Not open to students who have taken Speech and Drama 104. T Th 11. Laboratory, M 2-4. Mr. Robertson.

An introductory course in acting: analysis and performance of varied types of dramatic prose and poetry; study of speech and action as adapted to the stage with special attention to problems of characterization; reports, individual exercises, and group rehearsal.

285. PLAY PRODUCTION

Fall term. Credit three hours. Not open to freshmen. T Th 10. Laboratory, M 2-4. Mr. McCalmon.

Principles and methods of dramatic production, with special attention to directorial controls. Fundamentals of theatrical mounting; survey of practical phases of production. Required of majors in drama; recommended to others as basic to all 300 and 400 courses in dramatic production.

[373. A SURVEY OF THEATRICAL THEORY

Not offered in 1965-1966.]

375. THE MOTION PICTURE: A SURVEY

Fall term. Credit four hours. T Th 11. Laboratory, T 2-4:30. Mr. Beck.

An introduction to the history and art of the film: its characteristic problems, devices, and development. Representative motion pictures, from *The Great Train Robbery* and Griffith's *The Birth of a Nation* or *Intolerance* to contemporary films of significance, will be studied. Students are urged to attend the film programs of the University Theatre.

376. THE MOTION PICTURE: FILMS OF FACT

Spring term. Credit four hours. T Th 11. Laboratory, T 2-4:30. Mr. Beck.

An examination of the non-fiction film: the documentary and its derived types including propaganda, informational, and classroom films. Attention will be given to the artistic and functional values of motion picture essays, both American and foreign. Lectures, discussions, and reports; examples of various types of films will be shown and analyzed.

381. STAGECRAFT

Fall term. Credit four hours. No prerequisite but previous study of acting or play production recommended. M W 12. Laboratory, T 2-4:30. Miss Gibson.

The theory and practice of stage production and design; theatre structure and equipment, problems and practice in scene construction and painting, elements of lighting. Lectures, demonstrations, research reports.

382. STAGE LIGHTING AND DESIGN

Spring term. Credit four hours. Prerequisite, Speech and Drama 381 or consent of instructor. M W 12. Laboratory, T 2-4:30. Miss Gibson.

A consideration of the history, theory, and practice of lighting and design in the pictorial elements of dramatic production. Lectures, demonstrations, and special projects.

383-384. THEATRE PRACTICE

Throughout the year; may be entered either term. Credit two hours a term. Primarily for majors in drama but open by consent of the instructors to other students who have taken or who are taking Speech and Drama 104, 283, or 285. Hours to be arranged. Mr. Carlson, Miss Gibson, and the Staff of the University Theatre.

Planning and execution of projects in the productions of the University Theatre.

[385. ADVANCED DIRECTING

Not offered in 1965-1966.]

386. ADVANCED ACTING

Spring term. Credit four hours. Prerequisite, Speech and Drama 283 or consent of instructor. W 2-4:30 Mr. Albright.

Varied projects in acting and group rehearsal, correlated with public presentations; individual drills, pantomimes, and reading exercises.

388. PLAYWRITING

Fall term. Credit four hours. Previous study in play production recommended. F 2-4:30. Mr. McCalmon.

A consideration of the art and craft of writing for the theatre; practice through the composition and testing of one-act plays.

391. HISTORY OF THE THEATRE

Fall term. Credit four hours. M W F 10. Mr. Carlson.

The development of the theatre, with special attention to the period theatres and theatrical styles which influence modern stage presentation.

392. AMERICAN DRAMA AND THEATRE

Spring term. Credit four hours. M W F 10. Mr. Robertson.

A study of the American theatre and of representative American plays from the colonial period to the present, with emphasis on the drama as a reflection of the national life and culture.

491. SEMINAR IN THEATRE HISTORY

Spring term. Credit four hours. Prerequisite, Speech and Drama 391 or consent of instructor. Th 2-4:30. Mr. Carlson.

Selected topics in the history of the theatre.

495. THEATRE AESTHETICS

Fall term. Credit four hours. Prerequisites, Speech and Drama 285 plus two 300-level or 400-level courses in drama. W 2-4:30. Mr. Albright.

The chief theories of dramatic production in relation to aesthetic principles.

497. THEATRE CRITICISM

Spring term. Credit four hours. Prerequisite, consent of instructor. F 2-4:30. Mr. Beck.

Examination of contemporary critical theory, related primarily to plays in production.

[595. SEMINAR IN THEATRE AESTHETICS

Not offered in 1965-1966.]

[597. SEMINAR IN THEATRE CRITICISM

Not offered in 1965-1966.]

690. THESES AND SPECIAL PROBLEMS IN DRAMA AND
THE THEATRE

Either term. Credit and hours to be arranged. Messrs. Albright, Carlson, McCalmon, and Beck.

Open to graduate candidates working on theses and to other graduates prepared for independent study of special topics in drama and theatre.

Three prizes are offered under the auspices of the Department: the Heermans Prize of One-Act Plays on an American Theme (open to undergraduates), the Cornell Dramatic Club Prize for One-Act Plays (open to graduates and undergraduates with no restriction as to theme), and the Cornell Dramatic Club First President's Prize for significant contributions to the theatre program.

The Drummond Awards were established in honor of the late Professor A. M. Drummond, to acknowledge, each year, outstanding achievements by undergraduate members of the Cornell Dramatic Club and other undergraduate participants in the University Theatre program.

Honors

328-329. INDEPENDENT STUDY: HONORS

Throughout the year. Credit four hours a term. Prerequisite, acceptance as a candidate for Honors. Hours to be arranged. Members of the Department.

428. HONORS SEMINAR

Spring term. Credit four hours. Prerequisite, senior standing as a candidate for Honors. Hours to be arranged. Members of the Department.

429. HONORS RESEARCH

Fall term. Credit four hours. Prerequisite, senior standing as a candidate for Honors. Hours to be arranged. Members of the Department.

INTERDEPARTMENTAL COURSES

301-302. BRAIN MECHANISMS AND MODELS

Throughout the year. Credit four hours a term. Prerequisites, calculus, graduate or advanced undergraduate standing, and consent of instructor. Knowledge of modern algebra and probability theory is desirable. Lecture, M 3-4:30, Th 3-4:30. Mr. Rosenblatt with assistance of guest lecturers.

Fall semester: review of fundamentals of neurophysiology, psychological and physiological criteria for brain models, computers, and digital automata in relation to brain mechanisms, review of representative models, theory of elementary perceptrons. The Mark I perceptron will be available for laboratory work. Spring semester: theory

of multi-layer and cross-coupled perceptrons; recognition of temporal patterns; problems of figure organization, cognitive sets, sequential programs, and other problems of advanced models.

404. COMPUTER METHODS IN BEHAVIORAL SCIENCES

Spring term. Credit four hours. Prerequisite, an intermediate statistics course (may be taken concurrently). Lectures, T Th 9 Laboratory, M 4-6. Mr. Rudan.

Use of digital computers in research, especially in the behavioral sciences. Design and analysis of research instruments (questionnaires). The course will be given in three five-week sections: (1) use of punched card processing equipment for data analysis and manipulation; (2) description of, and procedures for using, standard programs for statistical analysis of data; (3) fundamentals of programing computers using the FORTRAN language.

Latin American Studies

The attention of students interested in Latin American Studies is called to the variety of courses in this field offered in different departments: Agricultural Economics (Agr.) 665; Anthropology 332, 351, 541; Economics 325 and 565, History 319-320, 487, 488; Industrial and Labor Relations (ILR) 533; Rural Sociology (Agr.) 414; Spanish 311-312.

SEMINAR: LATIN AMERICAN STUDIES 602

Spring term. Credit four hours. Hours to be arranged. Mr. Davis.

A required course for all graduate students minoring in Latin American studies. Students will work on projects in their field of interest under the direction of a faculty member. Various faculty specialists in Latin American affairs will participate in the seminar.

COURSES IN OTHER DIVISIONS

Courses of interest to students in the College of Arts and Sciences are offered in military science, aerospace studies (AFROTC), naval science, and physical education.

The offerings in military training are described in the *Announcement of Officer Education*.

The courses in physical education are described in publications which the Department of Physical Education makes available to students at registration.

Faculty

1965-66 *

James A. Perkins, President of the University
Stuart MacDonald Brown, Jr., Dean of the College of Arts and Sciences
George Ferris Cronkhite, Associate Dean and Secretary of the College of Arts and Sciences
F. Dana Payne, Jr., Associate Dean of the College of Arts and Sciences
George Mark Ellis, Assistant Dean of the College of Arts and Sciences
Barbara B. Hirshfeld, Assistant Dean of the College of Arts and Sciences

Meyer Howard Abrams, Ph.D., Frederic J. Whiton Professor of English ²
Charles D. Ackerman, Ph.D., Assistant Professor of Sociology
Barry Banfield Adams, Ph.D., Assistant Professor of English
George Plimpton Adams, Jr., Ph.D., Professor of Economics
Robert Martin Adams, Ph.D., Professor of English
Howard Bernhardt Adelman, Ph.D., Professor of Histology and Embryology
Frederick Browning Agard, Ph.D., Professor of Linguistics ³
Ralph Palmer Agnew, Ph.D., D.Sc., Professor of Mathematics
Andreas C. Albrecht, Ph.D., Professor of Chemistry
H. Darkes Albright, Ph.D., Professor of Speech and Drama
Alan Anthony Altshuler, Ph.D., Assistant Professor of Government
Vinay Ambegaokar, Ph.D., Associate Professor of Physics
Archie Randolph Ammons, B.S., Instructor in English
John Maxwell Anderson, Ph.D., Professor of Zoology
Judith Helena Anderson, M.A., Instructor in English
Moshe Anisfeld, Ph.D., Assistant Professor of Psychology
Douglas Nelson Archibald, M.A., Instructor in English
Hete B. Ascher, Instructor in Russian
Robert Ascher, Ph.D., Associate Professor of Anthropology and Archaeology

* Numbers following names indicate: (1) leave of absence, fall term, 1965-66;
(2) leave of absence, spring term, 1965-66; (3) leave of absence, 1965-66.

The listing of the faculty of the College of Arts and Sciences does not necessarily include all appointments or resignations for 1965-66.

- William Weaver Austin, Ph.D., Professor of Music
 James Burton Ax, Ph.D., Associate Professor of Mathematics
 William Ian Axford, Ph.D., Associate Professor of Astronomy
 John Paul Bakke, M.A., Assistant Professor of Speech and Drama
 Cesareo Bandera-Gomez, M.A., Assistant Professor of Romance Literature
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