

Cornell University

ANNOUNCEMENTS

College of Arts and Sciences



1966-67

CORNELL UNIVERSITY ANNOUNCEMENTS

The Cornell Announcements are designed to give prospective students and others information about the University. The prospective student should have a copy of the General Information Announcement; after consulting that, he may wish to write for one or more of the following Announcements:

New York State College of Agriculture (Four-Year Course), College of Architecture, College of Arts and Sciences, Department of Asian Studies, School of Education, College of Engineering, New York State College of Home Economics, School of Hotel Administration, New York State School of Industrial and Labor Relations, Center for International Studies, Officer Education (ROTC), Summer Session.

Undergraduate preparation in a recognized college or university is required for admission to the following Cornell divisions, for which Announcements are available:

Graduate School, Graduate School of Business and Public Administration, Law School, Medical College, Cornell University-New York Hospital School of Nursing, Graduate School of Nutrition, New York State Veterinary College.

Requests for the publications listed
above may be addressed to

CORNELL UNIVERSITY ANNOUNCEMENTS
Edmund Ezra Day Hall, Ithaca, New York 14850

(The writer should include his zip code.)

Cornell University

College of
Arts and Sciences

1966-67

Academic Calendar

1966-67

Freshman Orientation	S, Sept. 17
Registration, new students	M, Sept. 19
Registration, old students	T, Sept. 20
Instruction begins, 1 p.m.	W, Sept. 21
Midterm grades due	W, Nov. 9
Thanksgiving recess:	
Instruction suspended, 12:50 p.m.	W, Nov. 23
Instruction resumed, 8 a.m.	M, Nov. 28
Christmas recess:	
Instruction suspended, 10 p.m.	W, Dec. 21
Instruction resumed, 8 a.m.	Th, Jan. 5
First-term instruction ends	S, Jan. 21
Registration, old students	M, Jan. 23
Examinations begin	T, Jan. 24
Examinations end	W, Feb. 1
Midyear recess	Th, Feb. 2
Midyear recess	F, Feb. 3
Registration, new students	S, Feb. 4
Second-term instruction begins, 8 a.m.	M, Feb. 6
Midterm grades due	S, Mar. 25
Spring recess:	
Instruction suspended, 12:50 p.m.	S, Mar. 25
Instruction resumed, 8 a.m.	M, Apr. 3
Second-term instruction ends, 12:50 p.m.	S, May 27
Final examinations begin	M, May 29
Final examinations end	T, June 6
Commencement Day	M, June 12

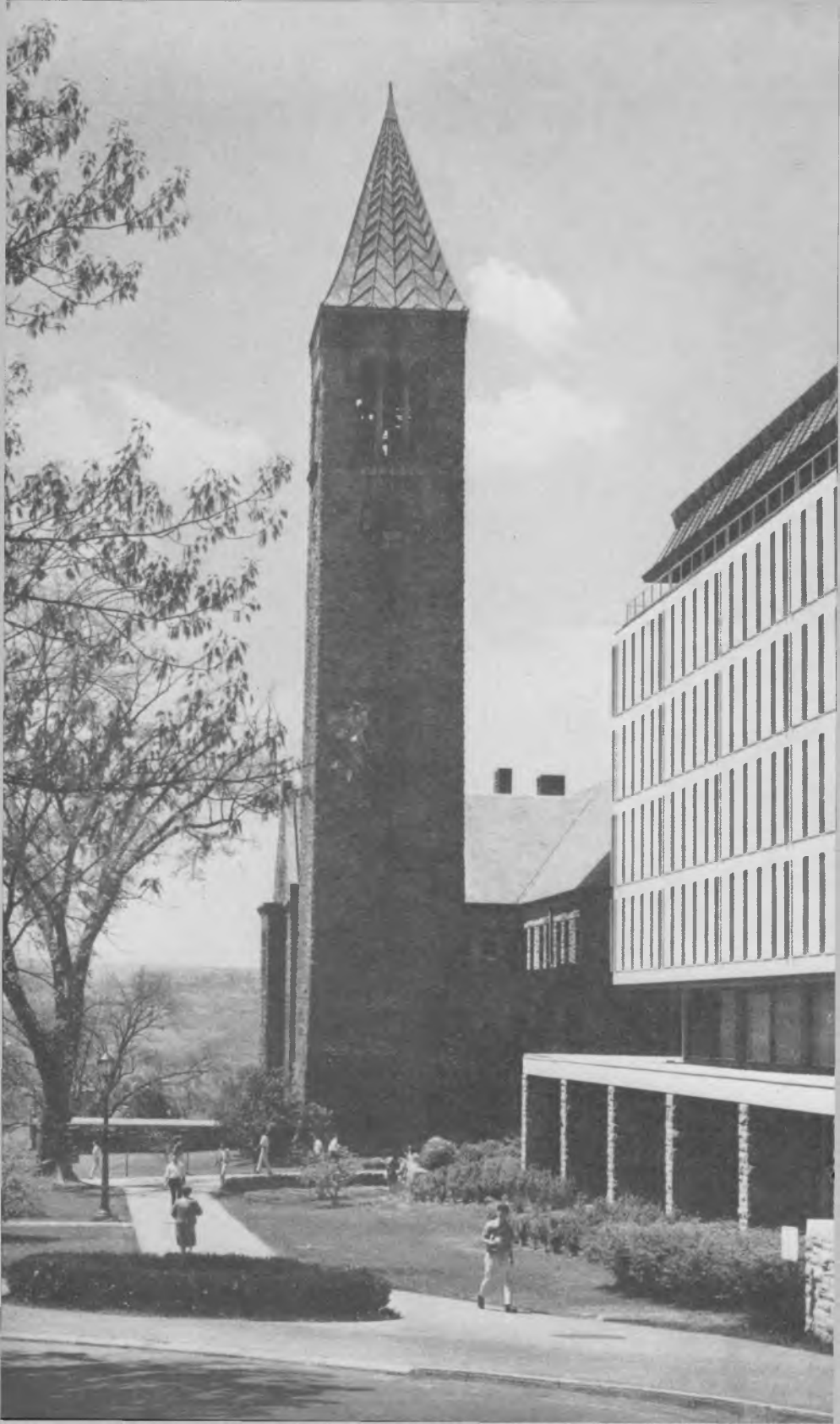
The 1967-68 Academic Calendar was incomplete at publication date, but it will include the following (clock hours unavailable): Registration: new students, Friday, Sept. 8, 1967; old students, Saturday, Sept. 9. Instruction begins Monday, Sept. 11. Thanksgiving recess: instruction suspended Wednesday, Nov. 22, and resumed Monday, Nov. 27. Christmas recess begins Saturday, Dec. 16. Study period begins Wednesday, Jan. 3, 1968. Examinations begin Monday, Jan. 8, and end Tuesday, Jan. 16. Registration: new students, Friday, Jan. 26; old students, Saturday, Jan. 27. Second-term instruction begins Monday, Jan. 29, and ends Saturday, May 11. Study period begins Monday, May 13. Examinations begin Monday, May 20, and end Tuesday, May 28. Commencement, Monday, June 3.

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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 assure 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 12). 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 upper-class standing will be carefully examined. Action on completed applications for transfer will be taken about May 15. A student seeking admission to the College of Arts and Sciences from some other undergraduate division of Cornell must first complete a year of successful study in that division.

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.

Since the publication of the *Announcement of General Information* for 1966-67, two important changes have been made.

(1) The tuition in the College of Arts and Sciences will be \$775 a term and the General Fee will be \$200 a term, making a total of tuition and fee of \$975 a term.

(2) Every student is required to have a chest X-ray, and opportunity is given to satisfy the requirement during the student's first week on campus. The cost of the X-ray examination is included in the General Fee. When a student who has been away from the University for more than a year wishes to re-enter, he must, at his own expense, once more fulfill the chest X-ray requirement.

For information on other matters of general interest such as details about entrance requirements, housing and dining services, living expenses, applications for financial aid, motor vehicle regulations, and student conduct, consult the *Announcement of General Information*. 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, chemistry, European history, mathematics, music, and physics.

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 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.

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 1966-1967 registration periods will be:

For fall term courses.....April 25 to May 13, 1966

For spring term courses.....October 24 to November 16, 1966

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 28 for the fall term and prior to December 14 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 by early June from the Chairman of the Advisory Board for Underclassmen.

ADVISERS

The counseling staff of the Dean's Office and certain designated faculty members act as advisers to freshmen and sophomores. Their role is to assist the student in his choice of studies, to advise him during the term regarding his work, and to provide him help with personal problems and the choice of a career.

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 may be permitted by the College under special conditions and upon recommendation of the student's department. 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. (Under these conditions upperclassmen may take the intensive introductory language courses (101 and 102) and receive four hours of credit per semester.) Courses at the 100 level 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.

12 UNDERCLASS REQUIREMENTS

Advanced standing credit including summer session credit is limited to thirty hours.

2. Meet the Freshman Humanities requirement.

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.

Details of Requirements

1. **FRESHMAN HUMANITIES REQUIREMENT.** A student is required to complete in each term of his freshman year one of the courses specially designed to provide discussion in small classes and to emphasize written discourse. The two courses need not be in the same subject, but they must be designated as meeting this requirement. A description of such courses as offered in a number of departments will be sent to entering freshmen with other registration materials by early June.

Note: This requirement is not the same as the Humanities requirement of Distribution I. A course used in satisfying this requirement may not be used in satisfying a Distribution I or Distribution II requirement.

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 204 or 302; in Arabic by completing Arabic 208. 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 or 112 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 26 and April 5 of the 1966-67 academic year.

A student who enters from a foreign country and whose mother

14 UPPERCLASS REQUIREMENTS

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.

3. **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. For the specific courses which satisfy these requirements, see the headnotes of the various departments. Courses used to satisfy the Freshman Humanities requirement or the language requirement may not be used to satisfy Distribution I requirements.

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

4. **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 at least 48 must be in courses given in the College of Arts and Sciences. However, courses outside the College which are specified as satisfying the requirements of his major program may be counted in the 48 hours. 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 C— 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 upper-class 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 upper-class 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 C— or 70, 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 AND WITHDRAWALS

For reasons satisfactory to the Dean and the faculty, a student in good standing 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. If a leave of absence is to take effect during the term in which the student is already registered, it must be requested by November 15 in the fall semester or April 4 in the spring semester. After those dates it will be granted only upon approval of the Academic Records Committee.

There are two kinds of withdrawal; each is a severance of the student's connection with the College.

(a) *Voluntary withdrawal* is initiated by the student who wishes to



leave the College permanently. If it is to take effect during the term for which the student is already registered, it must be requested by December 1 in the fall semester or by May 1 in the spring semester.

(b) *Required withdrawal* is an action taken by the Academic Records Committee or by the Advisory Board for Underclassmen and drops the student permanently from the rolls of the College.

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 for courses range in descending order from A+ through D-, the lowest passing grade. F is a failing grade. 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.

Final grades of S or U may also be given in some courses. S means the student receives the credit specified for the course; U means no credit. In distinction from the grades A+ through F, the grades of S and U have no assigned numerical equivalents and will not enter into a student's grade average. In certain courses deemed by the College to require no greater precision of grading, all final grades will be S or U. Furthermore, an undergraduate registered in the College of Arts and Sciences may, after consultation with his adviser, elect to receive a grade of S or U instead of one of the letter grades (A+ to F) in one Arts College course per term, provided that the course is not offered in satisfaction of his major and provided that the instructor is willing to give grades of S or U. The student must declare his wish to receive S or U when he registers for the course. After the first two weeks of instruction a student may not change from one grading basis to the other.

An *incomplete* is not a satisfactory grade. It is 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 grade of F, unless an extension of time is granted by the Committee on Academic Records.

A student will be considered in good academic standing for the term if, taking a normal course load of at least fifteen hours, he receives no grade of F or U and receives no more than one D. If his record falls below this level he may be placed on warning or be required to withdraw permanently from the College. Moreover, a student failing to make satisfactory over-all progress in grades or in hours (whether from failures or "incompletes") or in the requirements of the major may be

placed on warning or required to withdraw at any time. Failure to meet the requirements for upperclass standing after four terms will ordinarily terminate a student's residence.

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 B— or better in at least ninety hours of courses, and of A— or better in at least sixty of these; (2) have not received a grade below C— in more than one course; (3) have received no failing grade. 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 B—. 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 104A 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 the appropriate member of the committee 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, 121 Clark 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 stu-

dent include chemistry in his course of study. Some freshman premedical students choose to take two sciences; either chemistry and biology or chemistry and physics. Students who plan to make biology their major subject will find it advantageous to include biology 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 freshman program include English composition (six hours), chemistry, and language.

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 2,800,000 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 150,000 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 30,000 periodicals and serials 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.

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 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 \$1950, 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 scholarship 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.

COURSES OF INSTRUCTION

AMERICAN STUDIES

Mr. R. H. Elias, Acting Chairman; Messrs. S. M. Brown, Jr., D. B. Davis, D. F. Dowd, 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 B 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 preregistration 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, instructor to be announced. 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, A. Cohen, H. F. Dobyns, C. F. Hockett, K. A. R. Kennedy, B. Lambert, W. W. Lambert, T. F. Lynch, M. E. Opler, J. M. Roberts, L. Sharp, J. T. Siegel, R. J. Smith, Miss Judith Treistman, Messrs. 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.

A major in anthropology normally involves the student in some work in all four subdivisions of the subject: social anthropology, linguistics, archaeology, and physical anthropology. While the student's developing interests may lead him to concentrate in the humanistic, social, or natural science aspects of anthropology, the major is designed to provide a rounded view of the study of man. The specific program of courses in the major and related subjects is designed by 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 B— and an average in departmental courses of at least B, or show evidence of exceptional promise. Honors students may fulfill part or all of their 400-level requirements by taking Anthropology 491 and 492.

Specialized instruction is offered in Anthropology 497–498 (Topics in Anthropology). Such study is open to a strictly limited number of upperclassmen. Consent of the instructor is required.

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, linguistics; 6, archaeology; 7, physical anthropology; 8, applied anthropology.

The Distribution I requirement in Social Sciences is met in anthropology by Anthropology 101 and 102.

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 345 (Theories of Personality).
- c. Industrial and Labor Relations 210 or equivalent.

(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 program in social relations should apply to the chairman of the Social Relations Committee, Robin M. Williams, Jr.

Introductory and General Courses

101. INTRODUCTION TO CULTURAL ANTHROPOLOGY

Fall term. Credit three hours. Open only to freshmen and sophomores. M W (F) 10. Discussion sections to be arranged. 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. Open only to freshmen and sophomores. Anthropology 101 is not prerequisite to Anthropology 102. T Th (S) 11. Discussion sections to be arranged. Mr. Lynch.

An exploration of the archaeological 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.

[201-202. SEMINAR: PROBLEMS IN ANTHROPOLOGY]

Throughout the year or either term. Credit three hours a term. Open only to selected underclassmen who have had Anthropology 101 or 102 or both, and the special permission of the instructor. Messrs. Ascher, Lynch, Smith, and Wolf. Not offered in 1966-67.

301. SOCIAL ANTHROPOLOGY

Fall term. Credit four hours. Open to sophomores and upperclassmen who have not had Anthropology 101. 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.

GENERAL LINGUISTICS

(See Linguistics 301.)

303. PREHISTORIC ARCHAEOLOGY

Fall term. Credit four hours. Open to sophomores and upperclassmen without prerequisite. T Th S 11. Mr. Lynch.

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

304. PHYSICAL ANTHROPOLOGY

Spring term. Credit four hours. Open to sophomores and upperclassmen without prerequisite. M W F 11. Mr. Kennedy.

A survey of the biological history of man as interpreted from the evidence of comparative primate anatomy, primatology, and the fossil record with particular attention to taxonomy and phylogeny, proto-cultural development and on-going human evolution.

[305. CULTURE AND PERSONALITY]

Fall term. Credit four hours. Mr. Wolf. Not offered in 1966-67.

312. CONTEMPORARY ANTHROPOLOGICAL THEORY AND METHOD

Spring term. Credit four hours. M W F 12. 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.

313. CULTURAL CHANGE

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

A study of various theories of cultural change and their relevance to the on-going social process; an analysis of such concepts as innovation, diffusion, and acculturation in relation to culture change theory; a consideration of factors involved in maintaining stability or stimulating change in nonindustrialized cultures.

314. APPLIED ANTHROPOLOGY

Spring term. Credit four hours. M W F 12. Mr. Dobyns.

The uses of anthropology in the modern world. Designed not only for students of the humanities and social sciences, but also for natural scientists concerned with the cultural problems involved in technological change, community development, native administration, and modernization in various regions of the world.

[315. ANTHROPOLOGY AND HISTORY]

Fall term. Credit four hours. T Th S 10. Mr. Smith. Not offered in 1966-67.

[320. ART AND CULTURE]

Spring term. Credit four hours. M W F 2. Mr. Smith. Not offered in 1966-67

323. COMPARATIVE RELIGIOUS SYSTEMS

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

A comparative study of religious thought and behavior emphasizing the religious beliefs and systems of non-literate and non-Western peoples. 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.

324. MYTH, RITUAL, AND SYMBOL

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

A study of various approaches to the understanding of symbolism through an examination of the structure, properties, and functions of myth and ritual, as described in recent studies of native African, Australian, and Latin American systems of thought and imagination and of modern religious movements in both the Old and New Worlds. Methods of analysis suggested by anthropologists, literary critics, philosophers, and historians of religion will be explored through the work of such writers as Lévi-Strauss, Durkheim, Leach, Empson, Burke, Daniélou, and Eliade.

[326. COMPARATIVE ECONOMIC BEHAVIOR]

Spring term. Credit four hours. T Th S 10. Mr. Siegel. Not offered in 1966-67.

328. 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.

363. ARCHAEOLOGY OF ASIA

Fall term. Credit four hours. T Th S 10. Miss Treistman.

A survey of the archaeology of Asia with emphasis on the origins of civilization in India, Southeast Asia, China, and Japan.

364. ARCHAEOLOGY OF THE AMERICAS

Spring term. Credit four hours. T Th S 9. Miss Treistman.

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

372. LIVING RACES OF MAN

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

A survey of the major features of phenotypic variation in human populations today. Attention is directed to the evolutionary factors of race formation operating through time and across geographical lines, to the racial histories of particular human groups, and to the development of concepts about race in Western thought.

Courses for Upperclassmen and Graduates

415-416. SURVEY OF ANTHROPOLOGICAL THEORY

Throughout the year. May be taken either term or both terms. Credit four hours a term. M W F 3. Mr. Opler.

Anthropological theory to 1930, Fall term; contemporary theory, Spring term. 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.

420. 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.

421. KINSHIP AND SOCIAL ORGANIZATION

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

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.

[424. FOLKLORE AND CULTURE]

Spring term. Credit four hours. M W F 3. Mr. Turner. Not offered in 1966-67.

426. THE 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.

427. CONSTANTS AND VARIABLES IN CULTURE

Fall term. Credit four hours. M W F 2. Mr. Roberts.

An examination of those similarities and differences in cultures throughout the world which have claimed the attention of behavioral scientists. Major cross-cultural studies are reviewed, and specific use is made of the Human Relations Area Files in Olin Library.

[431. ETHNOLOGY OF NORTH AMERICA]

Fall term. Credit four hours. Prerequisite, Anthropology 101 or 301, or consent of instructor. M W F 3. Mr. Roberts. Not offered in 1966-67.

432. ETHNOLOGY OF MIDDLE AND SOUTH AMERICA

Spring term. Credit four hours. 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.

434. ETHNOLOGY OF MAINLAND SOUTHEAST ASIA

Spring term. Credit four hours. T Th 3-4:30. Mr. Sharp.

The development and distribution of major cultural systems in mainland

Southeast Asia. Discussion of selected groups in southern China, Assam, Burma, Thailand, Laos, Cambodia, and Vietnam, and of the fate of traditional cultural characteristics following the expansion of Chinese, Indian, Moslem, and Western civilizations into these areas.

435. ETHNOLOGY OF ISLAND SOUTHEAST ASIA

Fall term. Credit four hours. T Th 3-4:30. Mr. Siegel.

A survey of cultures of Indonesia, Malaysia and the Philippines with attention focused on social organization, rituals, beliefs, and forms of cultural expression. Selected societies will be studied in some detail.

437. ETHNOLOGY OF AFRICA

Fall term. Credit four hours. T Th 5-9. Mr. Cohen.

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.

[439. ETHNOLOGY OF OCEANIA]

Fall term. Credit four hours. Prerequisite, Anthropology 101 or 301, or consent of instructor. M W F 2. Mr. B. Lambert. Not offered in 1966-67.

441. CULTURE AND SOCIETY IN SOUTH ASIA

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

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

443. CHINESE CULTURE AND SOCIETY

Fall term. Credit four hours. M W F 3. Mr. Wolf.

An analytical survey of the social structure and nonmaterial culture of late traditional China. Attention is given to cultural geography and population, family and kinship, stratification and mobility, religion and values, economic institutions, and the power structure.

[445. JAPANESE CULTURE AND SOCIETY]

Fall term. Credit four hours. M W F 9. Mr. Smith. Not offered in 1966-67.

451. ETHNOLINGUISTICS

Fall term. Credit four hours. W 2-4. Mr. Hockett.

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

[461. SCIENCE IN ARCHAEOLOGY]

Fall term. Credit four hours. Th 2-4; laboratory to be arranged. Mr. Ascher. Not offered in 1966-67.

[462. INTERPRETIVE ARCHAEOLOGY]

Spring term. Credit four hours. Prerequisite, Anthropology 102 or 303 or 364, or consent of instructor. Th 2-4; laboratory to be arranged. Mr. Ascher. Not offered in 1966-67.

471. PHYSICAL ANTHROPOLOGY LABORATORY

Fall term. Credit four hours. Prerequisite, Anthropology 102, 272, 372, 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.

491. HONORS SEMINAR

Fall term. Credit four hours. Hours to be arranged. Mr. B. Lambert.

492. HONORS THESIS

Spring term. Credit four hours. Prerequisite, Anthropology 491.

495. SOCIAL RELATIONS SEMINAR

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

497. TOPICS IN ANTHROPOLOGY

Either term. Credit two hours. Prerequisite, consent of instructor. Hours to be arranged. Staff.

498. TOPICS IN ANTHROPOLOGY

Either term. Credit four hours. Prerequisite, consent of instructor. Hours to be arranged. Staff.

Graduate Seminars

501. PROSEMINAR: THE SCOPE OF ANTHROPOLOGY

Fall term. Credit four hours. M 4-6. Mr. Sharp and Staff.

A survey of the several sub-fields of anthropology designed for all graduate students entering the field.

502. SEMINAR: FIELD RESEARCH

Spring term. Credit four hours. M 4-6. Mr. Turner and Staff.

Problems involved in the planning and execution of field investigations designed for graduate students preparing for or returning from field work.

507-508. SPECIAL PROBLEMS IN ANTHROPOLOGY

Throughout the year. Credit and hours to be arranged. Staff.

523. RELIGIOUS SYSTEMS: ISLAM IN WEST AFRICA

Fall term. Credit four hours. T 4-6. Mr. Cohen.

532. MIDDLE AND SOUTH AMERICA

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

534-535. SOUTHEAST ASIA

Throughout the year. Credit and hours to be arranged. Prerequisite, consent of instructors. Messrs. Siegel and Sharp.

[537. AFRICA]

Fall term. Credit four hours. Mr. Turner. Not offered in 1966-67.

[542. CHINA]

Spring term. Credit four hours. Mr. Wolf. Not offered in 1966-67.

[543. JAPAN]

Fall term. Credit four hours. Mr. Smith. Not offered in 1966-67.

545. PALAEOANTHROPOLOGY OF SOUTH ASIA

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

A survey of the prehistoric and proto-historic cultures of India, Pakistan, and Ceylon from the archaeological evidence. The physical anthropology of ancient and living populations associated with these ancient cultures.

565. ARCHAEOLOGY: AGRICULTURE AND CIVILIZATION

Fall term. Credit four hours. Th 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 1966-67.

[575. PHYSICAL ANTHROPOLOGY: HISTORY AND THEORY]

Fall term. Credit four hours. T 4-6. Mr. Kennedy. Not offered in 1966-67.

601-602. FIELD RESEARCH

Throughout the year. Credit to be arranged. Staff.

Field research seminars may be conducted in the United States, Latin America, Africa, India, Southeast Asia, Taiwan, Japan, and other areas for a limited number of adequately prepared students.

ASIAN STUDIES

Mr. R. J. Smith, Chairman; Messrs. L. P. Adams, E. Ahmed, D. Ashford, A. C. Atwell, K. Biggerstaff, N. C. Bodman, H. Capener, P. Devillers, A. T. Dotson, J. M. Echols, G. H. Fairbanks, H. Feldman, J. W. Gair, F. H. Golay, A. B. Griswold, D. Hawkes, M. Hugo-Brunt, R. B. Jones, Jr., G. McT. Kahin, G. B. Kelley, K. A. R. Kennedy, J. W. Lewis, T. C. Liu, C. A. Majul, J. McCoy, Miss Ruth McVey, Mr. J. W. Mellor, Miss Harriet C. Mills, Messrs. S. J. O'Connor, M. E. Opler, H. Shadick, L. Sharp, J. T. Siegel, M. Sill, Miss Judith Treistman, Messrs. A. P. Wolf, J. U. Wolff, O. W. Wolters, D. B. Young, 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 be recommended by the instructor in charge of that course. He must have received a minimum grade of C 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 B in courses in the humanities and social sciences. He must also maintain an average of B 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 also wish to enroll in Asian Studies 402 in his senior year, but this 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

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.)

PUBLIC POLICY AND ECONOMIC DEVELOPMENT

Fall term. M W F 9. Mr. Golay. (See Economics 371.)

ECONOMIC GROWTH AND DEVELOPMENT

Fall term. Hours to be arranged. Mr. Golay. (See Economics 571.)

[THE UNITED STATES AND ASIA]

Fall term. M W F 2. Mr. Kahin. (See Government 377.) Not offered in 1966-67.

SEMINAR IN THE INTERNATIONAL RELATIONS OF ASIA

Fall term. Hours to be arranged. Miss McVey. (See Government 577.)

[STUDIES IN ASIAN ART]

Spring term. Hours to be arranged. Mr. Atwell. (See Art 353, College of Architecture.) Not offered in 1966-67.

ARCHAEOLOGY OF ASIA

Fall term. T Th S 10. Miss Treistman. (See Anthropology 363.)

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 10. Mr. O'Connor. (See History of Art 386.)

[METHODS OF RESEARCH IN ASIAN ART]

Fall term. T 2-4:30. Mr. Young. (See History of Art 483.) Not offered in 1966-67.

[PROBLEMS IN ASIAN ART]

Spring term. T 2-4:30. Mr. Young. (See History of Art 484.) Not offered in 1966-67.

401. ASIAN STUDIES HONORS COURSE

Either term. Credit four hours a term. Staff.

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

402. ASIAN STUDIES DIRECTED READING

Either 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. M W F 3. Mr. Wolf. (See Anthropology 443.)

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.) Not offered in 1966-67.

[SEMINAR IN THE POLITICS OF CHINA]

Spring term. Hours to be arranged. Mr. Lewis. (See Government 547.) Not offered in 1966-67.

[SEMINAR IN THE FOREIGN POLICY OF CHINA]

Fall term. Hours to be arranged. Mr. Lewis. (See Government 583.) Not offered in 1966-67.

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 591-592.)

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 LATER CENTURIES]

Spring term. T 2-4:30. Mr. Young. (See History of Art 486.) Not offered in 1966-67.

HISTORY OF THE CHINESE LANGUAGE

Either term. Mr. Bodman. (See Chinese 402.)

LINGUISTIC STRUCTURE OF CHINESE

Either term. Mr. Bodman. (See Chinese 403.)

SINO-TIBETAN LINGUISTICS

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

[CHINESE HISTORICAL AND PHILOSOPHICAL LITERATURE IN TRANSLATION]

Fall term. M W F 10. Mr. Shadick. (See Comparative Literature 371.) Not offered in 1966-67.

CHINESE IMAGINATIVE LITERATURE IN TRANSLATION

Fall term. M W F 10. Mr. Shadick. (See Comparative Literature 372.)

Other courses dealing extensively with China are Anthropology 363; Economics 365, 371; Government 377, 577; History of Art 281, 483, 484.

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 - HOKKIEN.) Not offered in 1966-67.

ELEMENTARY CANTONESE CHINESE

(See Chinese 221-222 - CANTONESE.)

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.) Not offered in 1966-67.

CLASSICAL CHINESE POETRY AND DRAMA

(See Chinese 416.)

READINGS IN THE TRADITIONAL CHINESE NOVEL

(See Chinese 420.)

ADVANCED READINGS IN CLASSICAL CHINESE

(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 445.) Not offered in 1966-67.

[ART OF JAPAN]

Spring term. M W F 11. Mr. Young. (See History of Art 384.) Not offered in 1966-67.

Other courses dealing extensively with Japan are Anthropology 363 and History of Art 281.

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.)

JAPANESE READINGS FOR STUDENTS OF CHINESE

(See Japanese 401-402.)

South Asia

AREA COURSES

[CULTURE AND SOCIETY IN SOUTH ASIA]

Fall term. M W F 10. Mr. Opler. (See Anthropology 441.) Not offered in 1966-67.

SOUTH ASIA SEMINAR: PALEOANTHROPOLOGY OF SOUTH ASIA

Fall term. T 4-6. Mr. Kennedy. (See Anthropology 549.)

SEMINAR: THE AGRICULTURAL DEVELOPMENT OF SOUTH ASIA

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

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. Hours to be arranged. Messrs. Fairbanks, Gair and Kelley. (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.)

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.)

Other courses dealing extensively with South Asia are Agricultural Economics 364, 667 (Agr.); Anthropology 363; 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.).

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.)

ELEMENTARY SINHALESE

(See Sinhalese 101-102.)

ELEMENTARY TELUGU

(See Telugu 101-102.)

ELEMENTARY URDU

(See Urdu 101-102.)

Southeast Asia

AREA COURSES

ETHNOLOGY OF MAINLAND SOUTHEAST ASIA

Spring term. T Th 3-4:30. Mr. Sharp. (See Anthropology 434.)

ETHNOLOGY OF ISLAND SOUTHEAST ASIA

Fall term. T Th 3-4:30. Mr. Siegel. (See Anthropology 435.)

SEMINAR: SOUTHEAST ASIA

Both terms. Hours to be arranged. Messrs. Sharp and Siegel. (See Anthropology 534-535.)

[ECONOMIC GROWTH IN SOUTHEAST ASIA]

Fall term. Hours to be arranged. Mr. Golay. (See Economics 678.) Not offered in 1966-67.

[SOUTHEAST ASIAN ART AND ARCHAEOLOGY]

Spring term. F 2-4:30. Mr. O'Connor. (See History of Art 488.) Not offered in 1966-67.

GOVERNMENTS AND POLITICS OF SOUTHEAST ASIA

Spring term. M W F 8. Miss McVey. (See Government 344.)

SEMINAR IN POLITICAL PROBLEMS OF SOUTHEAST ASIA

Spring term. Hours to be arranged. Miss McVey. (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.)

SEMINAR: SOUTHEAST ASIAN LINGUISTICS

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

[SEMINAR: MALAYO-POLYNESIAN LINGUISTICS]

Throughout the year. Hours to be arranged. Mr. Wolff. (See Linguistics 573-574.) Not offered in 1966-67.

[SOUTHEAST ASIAN LITERATURE IN TRANSLATION]

Fall term. T 2-4. Mr. Echols. (See Comparative Literature 318.) Not offered in 1966-67.

501-502. SOUTHEAST ASIA

Throughout the year. F 4-6, or to be arranged. Credit 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 postwar 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, 1966 (INDOCHINA) Mr. Devillers, Spring term, 1967 (PHILIPPINES) Mr. Majul.

676. SOUTHEAST ASIAN RESEARCH TRAINING SEMINAR

Spring term. Hours to be arranged. Credit to be arranged. Mr. Majul.

Open only to advanced graduate students preparing for fieldwork in Southeast Asia.

Other courses dealing extensively with Southeast Asia are Art 353; Economics 371, 571; Government 377, 577; History of Art 281, 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.) Not offered in 1966-67.

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.)

[LINGUISTIC STRUCTURE OF INDONESIAN]

(See Indonesian 403.) Not offered in 1966-67.

ELEMENTARY JAVANESE

(See Javanese 221-222.)

INTERMEDIATE JAVANESE

(See Javanese 223-224.)

OLD JAVANESE

(See Linguistics 509-510.)

[ELEMENTARY TAGALOG]

(See Tagalog 101-102.) Not offered in 1966-67.

[LINGUISTIC STRUCTURE OF TAGALOG]

(See Tagalog 403.) Not offered in 1966-67.

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, J. E. Forbes, M. O. Harwit, D. O. Muhleman, E. E. Salpeter, R. W. Shaw.

Students who anticipate a major in astronomy should complete Astronomy 201-202 and the calculus not later than the sophomore year; they should consult the chairman as soon as possible. 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 561, 562, 572, 574; 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. 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.

338. ASTROCHEMISTRY

Fall term. Credit four hours. Prerequisites, Astronomy 202, the calculus, and the consent of the instructor. Lectures M W F 11. Laboratory to be arranged. Mr. Shaw. (For description, see Supplement.)

340. SPECIAL TOPICS IN ASTRONOMY

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

Instruction in selected topics for qualified students according to their needs and preparation. Observational techniques and instrumentation. Binary stars, orbital computation, coordinate measurement, photometry, and spectroscopy. Special attention to the problems of science teachers.

431. INTRODUCTION TO ASTROPHYSICS

Fall term. Credit three hours. Prerequisites, the calculus, Physics 207-208, Astronomy 202 or the consent of the instructor. Messrs. Forbes and Muhleman.

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.

432. INTRODUCTION TO SPACE PHYSICS

Spring term. Credit three hours. Prerequisites, Astronomy 431 or consent of instructor. Messrs. Forbes and Muhleman.

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.

460. COSMICAL GAS DYNAMICS

Spring term. Credit 3 hours. Hours to be arranged. Prerequisite, consent of instructor. Mr. Axford.

Aspects of gas dynamics relevant to astrophysical problems (shock waves, turbulence, instabilities). Topics include stellar winds, novae, the expansion of gaseous nebulae, and the condensation of stars from the interstellar medium.

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.

Relativistic astrophysics. Cosmological models and tests of models. Evolution of stars and galaxies. Quasars.

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

Spring 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. Scintillations. Applications to the theory of radio emission by the sun and by Jupiter.

531. COSMIC RAYS

Fall term. Credit 3 hours. Prerequisite, consent of the instructor. Hours to be arranged. Messrs. Axford and Gold.

Motion of high energy particles through interstellar and interplanetary space. Solar particles and Sun-Earth relations. Intensity time variations. Cosmic rays in the geomagnetic field. Cosmic rays in the galaxy. The origin of cosmic rays.

532. PHYSICS OF THE MAGNETOSPHERE

Spring term. Credit 3 hours. Prerequisite, consent of the instructor. Hours to be arranged. Mr. Axford.

Interaction between charged and neutral components of the ionosphere. Tidal theory of regular magnetic variations. Equatorial anomaly. Sporadic E. Structure and composition of the ionosphere. VLF and ELF emissions. Radiation belts. Aurora. Magnetic storms.

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

Fall 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 SCIENCES

Dr. R. S. Morison, Director; Messrs. J. M. Anderson, H. P. Banks, J. P. Barlow, R. A. Barr, C. O. Berg, D. W. Bierhorst, A. W. Blackler, W. L. Brown, J. M. Calvo, R. T. Clausen, L. C. Cole, C. L. Comar; Miss L. J. Daniel; Messrs. E. A. Delwiche, W. C. Dilger, T. Eisner, H. L. Everett, E. L. Gasteiger, J. L. Gaylor, Q. H. Gibson, P. W. Gilbert, D. J. Hall, Wm. Hansel, G. P. Hess, R. W. Holley, R. D. Holsten, W. T. Keeton; Miss E. B. Keller; Messrs. J. M. Kingsbury, G. A. Knaysi, R. P. Korf, A. D. Krikorian, J. N. Layne, S. L. Leonard, R. MacDonald, D. B. McCormick, W. N. McFarland, H. E. Moore, Jr., H. B. Naylor, A. L. Neal, W. L. Nelson, R. D. O'Brien, David Pimentel, E. C. Raney, R. B. Reeves, D. S. Robson, R. B. Root, F. Rosenblatt, H. A. Scheraga, H. W. Seeley, Jr., E. M. Shantz, A. M. Srb, F. C. Steward, H. T. Stinson, J. F. Thompson, B. V. Travis, C. H. Uhl, L. D. Uhler, J. R. Vallentyne, J. J. VanDemark, B. Wallace, J. W. Wells, J. H. Whitlock, H. H. Williams, W. A. Wimsatt, L. D. Wright, S. A. Zahler.

Students are urged to apply for provisional admission to the biological

sciences major during the second term of their freshman year or the first term of their sophomore year. Final admission to the specialization will require completion of (1) a year of biology (Biological Sciences 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 specialization in biological sciences unless his performance in the above courses gives evidence of capacity to do satisfactory work at a more advanced level.

In addition to the introductory courses in chemistry, biological sciences, 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) Biological Sciences 281, (4) Biological Sciences 431 (or 531), (5) the breadth requirement outlined below, (6) one of the concentration areas outlined below.

The breadth requirement is designed to insure 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 two of the following eight categories: (1) *Behavior*: Biological Sciences 421; Psychology 201, 323. (2) *Developmental Biology*: Biological Sciences 347, 385. (3) *Ecology and Evolution*: Biological Sciences 361, 475. (4) *Microbiology*: Biological Sciences 290. (5) *Morphology*: Biological Sciences 311, 313, 345. (6) *Physical Science and Mathematics*: Chemistry 236, 387 or 389; Geology 101 or 106; Mathematics 213 or 221; Plant Breeding 410. (7) *Physiology*: Biological Sciences 240, 413, 414, 511. (8) *Taxon-oriented Courses*: Biological Sciences 270, 341, 343, 344, 371; Entomology 212; Plant Pathology 309.

The concentration requirement is designed to help the student achieve depth in some area of biology of his own choosing. It permits maximum flexibility, while insuring that the selection of advanced courses will form a coherent and meaningful unit. The student should seek the advice of his adviser in selecting the courses he will take in fulfillment of both the breadth and concentration requirements. The possible concentration areas are:

(1) *Animal Physiology and Anatomy*: Twelve hours, usually selected from the following: Biological Sciences 311, 313, 410, 412, 413, 413A, 414, 419, 511, 511A, 512, 514; Animal Husbandry 427–428; Poultry 425, 520; Veterinary Medicine 924.

(2) *Behavior*: Fourteen hours to be selected in consultation with the adviser.

(3) *Biochemistry*: The student must fulfill the organic chemistry and biochemistry core requirements by taking Chemistry 357–358 and Biological Sciences 531. Chemistry 236 must be taken under the breadth requirement. In addition, the student should take Chemistry 389–390 (or 387–388) and Biological Sciences 533.

(4) *Botany*: Biological Sciences 240, 341, 345, 347 (two of these

courses may be selected under the breadth requirement), plus 7 additional hours in botany or closely related subjects chosen in consultation with an adviser representing his major interest in botany.

(5) *Ecology and Evolution*: At least 14 hours, selected in consultation with an adviser, usually from courses in the following areas: biogeography, biogeochemistry, comparative physiology, ecology (including plant ecology and quantitative ecology), evolution, limnology, marine ecology and oceanography, meteorology and climatology, parasitology, systematics. A course in introductory ecology, a course in systematics, and a course in physiology must be included here or under the breadth requirement.

(6) *Genetics and Development*: Twelve hours, usually selected from the following: Biological Sciences 347, 385, 480, 482, 486, 495, 584, Plant Breeding 410.

(7) *Microbiology*: Biological Sciences 290, which may be selected under the breadth requirement, plus 12 hours in courses in basic microbiology, including at least two with a laboratory (such as 390, 495, Veterinary Medicine 340).

Students who, for good reason, wish to undertake a course of studies not covered by these seven concentration areas may petition for permission to do so.

Students interested in teaching biology in secondary schools may specialize in Biological Sciences for the B.A. degree and then complete the requirements for the M.A.T. (Master of Arts in Teaching) degree during a fifth year in the School of Education. The fifth year includes one semester of graduate study in the sciences, a summer of preparation for teaching, and one semester of internship in a secondary school. Stipends and fellowship support are available to selected candidates in the fifth year. Students interested in the five-year program leading to secondary school teaching are urged to consult their adviser and an adviser in the School of Education during their freshman year.

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 B— or higher and permission of the Director of the Division of Biological Sciences. 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.

The Distribution I requirement in biological sciences for non-majors is satisfied by Biological Sciences 101-102 or 103-104. 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 list of possible combinations may be obtained from the office of the Director of the Division of Biological Sciences.

General Courses

101-102. GENERAL BIOLOGY

Fall and spring terms. Credit three hours a term. Course 101 prerequisite to Course 102, unless special permission is obtained from the instructor. Lectures, M W F 8, 10, or 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 T W 7-9:50 p.m. Neither the Friday lecture nor the laboratory will meet every week. Two preliminary examinations will be given each term at 7:30 in the evening. Mr. Keeton, Mr. 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 field of research. The intent is to acquaint students with the excitement and promise of modern biological research, both basic and applied, and, more particularly, with the research being done at Cornell.

103-104. PLANT AND ANIMAL BIOLOGY

Fall and spring terms. Credit three hours a term. Limited to 500 students; credit given for one term alone. Lectures, T Th 9 or 11. Laboratory, M T W Th or F 1:40-4:30, or M or T 10-12:50, or S 8-10:50 or 9-11:50. Mr. Banks (fall term), Mr. Leonard (spring term).

Designed to give students an understanding of the growth, development and evolution of plants and animals and their role in nature. This integrated course provides the basic knowledge necessary for those who intend to specialize in some aspect of plant or animal sciences.

Plant Biology (fall term) emphasizes the dynamic aspects of cell behavior, structure, function, evolution, and genetics in major plant groups.

Animal Biology (spring term) deals with the functional aspects of organ systems of animals beginning with the more familiar forms which serve as a point of reference. Material will include an introduction to the biochemical features of metabolism and regulatory control. Representatives of the major phyla will be used to illustrate biological principles.

301. LABORATORY METHODS IN BIOLOGY

Fall term. Credit three hours. Prerequisites, Biological Sciences 101-102 or 103-104. Limited to juniors, seniors, and graduate students; 20 students per section. Lecture-laboratory, T or F 10-12:30 and additional periods by appointment.

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

MATHEMATICAL AND STATISTICAL MODELS IN BIOLOGY

(See Plant Breeding 410.)

400. RESEARCH IN BIOLOGY

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

Practice in planning, conducting, and reporting independent laboratory and/or library research programs.

401. TEACHING BIOLOGY

Spring term. Credit four hours. Enrollment limited; permission to register required. Mr. Keeton and others.

Practice in teaching college biology; seminars on new developments.

600. SPECIAL TOPICS IN BIOLOGY

Fall or spring terms. Credit and hours to be arranged. Enrollment limited to students in the Ford Three-Year Scholar's Program. Mr. Hall.

Discussion 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.

[602. SEMINAR FOR M.S.T. DEGREE CANDIDATES]

Spring term. Credit one hour. Hours to be arranged. Mr. Uhler. Not offered in 1966-67.

Animal Physiology and Anatomy

210. HUMAN PHYSIOLOGY

Spring term. Credit three hours. Prerequisites, Chemistry 103 or equivalent and Biological Sciences 104 or 101-102 or equivalent are desirable; students must at least have taken high school courses in biology and chemistry. Lectures, M W F 10. Mr. Lutwak and Mr. McFarland.

Basic concepts of human anatomy and physiology will be presented to provide the groundwork for the understanding of the functioning of the human body in health and disease. Emphasis will be placed on the relationship of human physiology to problems of public health and contemporary living. The individual systems, such as cardiovascular, gastrointestinal, neurological, endocrine, renal, etc., will be discussed singly and in correlation with each other. Guest lecturers will be invited as appropriate.

311. COMPARATIVE ANATOMY OF VERTEBRATES

Fall term. Credit four hours. Prerequisites, Biological Sciences 101-102 or 103-104. Lectures, M W 8 or 9. Laboratory, M F or T Th 2-4:30, or T Th 8-10:30, or W F 9-11:30, or W 2-4:30 and S 8-10:30. Mr. Gilbert.

Dissections and demonstrations of representative vertebrate types, including fish, amphibian, reptile, bird, and mammal. Intended to give students an appreciation of man's structural heritage and some insight into the interrelationship of form and function among the vertebrates.

313. HISTOLOGY: THE BIOLOGY OF THE TISSUES

Fall term. Credit four hours. Prerequisites, a two-semester introductory biology sequence; comparative anatomy and organic chemistry or biochem-

istry desirable. Lectures, T Th 11. Laboratory, T Th 8-10:30 or 2-4:30. Mr. Wimsatt.

A general course dealing with the biology of the tissues to provide the student with a basis for understanding the microscopic and fine structural organization of vertebrates and the methods of analytic morphology at the cell and tissue levels. The dynamic interrelations of structure, chemical composition and function in cells and tissues are stressed.

INSECT MORPHOLOGY AND HISTOLOGY

(See Entomology 322.)

[410. PROBLEMS IN FUNCTIONAL VERTEBRATE ANATOMY]

Spring term. Credit four hours. Given in alternate years. Prerequisites, Biological Sciences 311 and consent of instructor. Lecture W 9; also discussion period to be arranged. Laboratory, W-F 2-5. Mr. Gilbert. Not offered in 1966-67.

This course is intended for a limited number of advanced students who have done exceptionally well in Biological Sciences 311. It is an advanced course, involving dissections and experiments, with emphasis on the structural and functional adaptations of representative vertebrates to their environment. As a supplement to regular laboratory exercises, each student will be expected to select a project and prepare a substantial term report on his work.

VERTEBRATE MORPHOLOGY

(See Veterinary Medicine 900.)

412. SPECIAL HISTOLOGY: THE BIOLOGY OF THE ORGANS

Spring term. Credit four hours. Given in alternate years. Prerequisites, Biological Sciences 313, or consent of instructor. Enrollment limited to 18 students. Lectures, W F 9. Laboratory, W F 2-4:30. Mr. Wimsatt.

A continuation of Biological Sciences 313. The microscopic and ultrastructural organization of the principal vertebrate organ systems are studied in relation to their development, functional interaction and special physiological roles. Biological Sciences 313 and 412 together present the fundamental aspects of the microscopic and submicroscopic organization of the vertebrate body from a physiological perspective. The organization of the course involves student participation in "lecture-seminars," and the prosecution of independent project work supplementary to the regular work of the laboratory. The latter enables students to gain practical experience with histological and histochemical preparative techniques.

413. GENERAL ANIMAL PHYSIOLOGY, LECTURES

Fall term. Credit three hours. Prerequisites, one year of biology and courses in chemistry; organic chemistry and biochemistry desirable. Lectures, M W F 10. Mr. McFarland.

The principles of animal physiology are developed through consideration of the functioning of cells, tissues and organs. Specific topics discussed include respiration, metabolism, circulation, excretion, chemical integration, muscle contraction, nerve action and sensory reception.

413A. GENERAL ANIMAL PHYSIOLOGY, LABORATORY

Fall term. Credit one hour. Prerequisites, Biological Sciences 413 or equivalent must be taken concurrently. Lecture W 2, alternate weeks only. Laboratory, T 8-11 or M T or F 1:40-4:30, alternate weeks. Mr. McFarland.

Students are introduced to basic techniques utilized in the study of the physiology of animal tissues. Experiments cover topics dealing with respira-

tion, properties of muscle, circulation, activity of nerves and osmotic phenomena.

FUNDAMENTALS OF ENDOCRINOLOGY

(See Animal Husbandry 427-428.)

COMPARATIVE PHYSIOLOGY OF REPRODUCTION OF VERTEBRATES

(See Poultry 425.)

414. MAMMALIAN PHYSIOLOGY

Spring term. Credit six hours. Prerequisites, a year of biological sciences and permission to register; courses in biochemistry, histology, and anatomy desirable. Lectures, M W F 8. Laboratory, M W 1-6. Mr. Visek (in charge), Messers Gasteiger, Hansel, and Reeves.

A general course in mammalian physiology including circulation, respiration, digestion, metabolism, renal function, endocrinology and the nervous system.

419. RESEARCH IN ANIMAL PHYSIOLOGY AND ANATOMY

Either term. Credit and hours to be arranged. Prerequisite, permission of the professor under whom the work is to be taken. Staff.

Practice in planning, conducting, and reporting independent laboratory and/or library research programs.

511. CELLULAR PHYSIOLOGY LECTURES

Fall term. Credit three hours. Prerequisites, previous courses in animal or plant physiology and biochemistry desirable. 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.

511A. CELLULAR PHYSIOLOGY LABORATORY

Fall term. Credit two hours. Prerequisite, consent of the instructor. 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.

[512. COMPARATIVE PHYSIOLOGY]

Spring term. Credit four hours.

Prerequisites, Biological Sciences 413 or 414 and biochemistry or the equivalent. Not offered in 1966-67.

513. EXPERIMENTAL ENDOCRINOLOGY

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

Lectures on the anatomy and physiology of the vertebrate endocrine glands, glandular interrelationships, mechanisms of hormone action, chemical and physiological properties of the hormones, assay methods. Laboratory includes small animal surgery, micro technique for the endocrines, illustrative experiments on the effects of hormones.

516. SPECIAL TOPICS IN COMPARATIVE PHYSIOLOGY

Spring term. Credit four hours. Prerequisite, consent of instructor. For ad-

vanced students in biological sciences. Enrollment limited. Lecture, 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.

Behavior

421. COMPARATIVE VERTEBRATE ETHOLOGY

Fall term. Credit three hours. Prerequisites, Biological Sciences 101-102 or 103-104 and permission of the instructor. Lectures, T Th 9. Laboratory, to be arranged. Mr. Dilger.

A survey of the methods and principles of vertebrate ethology for students specializing in this field or for those in other branches of zoology wishing to broaden their knowledge of animal behavior. Emphasis is placed on the causation, function, biological significance, and evolution of species-typical behavior. The laboratories are designed to give firsthand knowledge of the material covered in lectures.

PHYSIOLOGICAL PSYCHOLOGY

(See Psychology 323.)

COMPARATIVE PSYCHOLOGY

(See Psychology 326.)

425. RESEARCH IN NEUROBIOLOGY AND BEHAVIOR

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

Practice in planning, conducting, and reporting independent laboratory and/or library research programs.

520. COMPARATIVE NEUROLOGY

Spring term. Credit four. Prerequisite, permission of instructor. Lecture, 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.

521-522. BRAIN MECHANISMS AND MODELS

Throughout the year. Credit four hours a term. Prerequisites, calculus, introductory biology or psychology, graduate or advanced undergraduate standing, and consent of instructor. Acquaintance with modern algebra and probability theory is desirable. Lecture, M 3-4:30, Th 3-4:30. Mr. Rosenblatt.

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. 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; contemporary theories of memory.

FUNCTIONAL ORGANIZATION OF THE NERVOUS SYSTEM

(Veterinary Medicine 924.)

Fall term. Credit three hours for lecture, two hours for laboratory. Lectures

M W F 10. Laboratory, W 1-5 bi-weekly. Prerequisites, physiology, organic chemistry, physics, and/or consent of instructor. Physical chemistry and neuroanatomy desirable. Professor Gasteiger.

Function of the nervous system will be considered primarily from an electrophysiological viewpoint. Where appropriate, important studies of reflexology, chemical and feedback control, and comparative anatomy will be utilized. Laboratory studies will include electrical activity of cells, reflexes, decerebrate rigidity, acoustic microphonic response, subcortical stimulation, and evoked and spontaneous cortical activity.

620. SEMINAR IN NEUROBIOLOGY AND BEHAVIOR

Either term. Credit one hour. Intended primarily for senior undergraduates. Hours to be arranged. Staff.

Biochemistry

231. INTRODUCTORY BIOCHEMISTRY

Fall term. Credit three hours. Prerequisites, Chemistry 104 or 108, or the equivalent. May not be taken for credit by students who have completed a more advanced course in this Section. Lectures, T Th F 12. Mr. Williams.

A brief survey of organic chemistry as related to biological compounds and a discussion of selected biochemical reactions associated with the metabolism of animals, plants, and microorganisms. Especially designed as a general course for four-year students.

431. PRINCIPLES OF BIOCHEMISTRY, LECTURES

Fall term. Credit four hours. Prerequisites, Organic Chemistry 353-355 or the equivalent. Lectures, M 8, T Th S 8. Miss Daniel.

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

433. PRINCIPLES OF BIOCHEMISTRY, LABORATORY

Fall term. Credit three hours. Prerequisites, quantitative analysis, or permission of the instructor. Must be taken with or following Course 431. Laboratory, M W or T Th 2-4:30; one discussion period to be arranged. Preliminary examinations will be held twice during the semester at 7:30 p.m. Mr. Neal and assistants.

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

439. SPECIAL PROBLEMS IN BIOCHEMISTRY

Either term. Credit hours to be arranged. For undergraduate students concentrating in biochemistry. Prerequisite, adequate ability and training for the work proposed. Staff.

Special work in any branch of biochemistry on problems under investigation by the staff of the Section.

[530. BIOCHEMISTRY OF THE VITAMINS]

Spring term. Credit two hours. Given in alternate years. Prerequisite, Chemistry 353-355 and Biological Sciences 431 or their equivalent. Lecture T Th 10. Not given in 1966-67.

531. GENERAL BIOCHEMISTRY, LECTURES

Fall term. Credit four hours. Prerequisites, quantitative analysis, organic

chemistry 358 or the equivalent, or permission of the instructor. Lectures, M W F S 9. Mr. Calvo.

An integrated treatment of the fundamentals of biochemistry.

533. GENERAL BIOCHEMISTRY, LABORATORY

Fall term. Credit three hours. Prerequisites, quantitative analysis, or permission of the instructor. Must be taken with or following course 531. Laboratory, M W or T Th 2-4:30; one discussion period to be arranged. Preliminary examinations will be held twice during the semester at 7:30 p.m. Mr. Neal and assistants.

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

534. ADVANCED GENERAL BIOCHEMISTRY, LECTURES

Spring term. Credit four hours. Prerequisites, Biological Sciences 531 and Physical Chemistry 390 or permission of instructor. Lectures, M W F S 9. Staff.

A broad treatment of biochemistry at an advanced level.

536. ADVANCED BIOCHEMISTRY, LABORATORY

Spring term. Credit three hours. Prerequisites, Biological Sciences 533 or the equivalent and Biological Sciences 534 (may be taken concurrently). Registration by permission of instructor before November 1. Laboratory M W 1:40-4:30; additional periods to be arranged. Mr. Nelson and assistants.

Selected experiments on carbohydrates, lipids, proteins, amino acids, nucleic acids and metabolism (cellular particulates, kinetics, general enzymology) will be given to illustrate basic biochemical principles. The course will emphasize the quantitative aspects rather than qualitative identifications.

537-538. ADVANCED BIOCHEMISTRY, LECTURES

Fall and spring terms. Credit one or two hours per term. Students may take one or more sections of the course for one to four hours credit, as each section may be taken without having taken a preceding section. Prerequisite, Biological Sciences 534. Lecture, T Th 9.

This course will be comprised of advanced lectures divided into four sections of one hour credit each. Fall term, Mr. Gaylor, carbohydrates and lipids, one hour; Mr. Hess, proteins and enzymes, one hour. Spring term, Mr. Calvo, nucleic acids and control mechanisms, one hour; Mr. Thompson, plant biochemistry, one hour.

631. GRADUATE SEMINAR IN BIOCHEMISTRY

Fall and spring term. Credit one hour per term. Hours to be arranged. Staff.

Required of all graduate students majoring in biochemistry. The course may be repeated for credit.

639. BIOCHEMISTRY SEMINAR

Fall and spring terms. No credit. F 4:15. Staff.

Lectures on current research in biochemistry presented by distinguished visitors and staff.

Botany

240. PLANT PHYSIOLOGY

Fall or spring term. Credit four hours. Prerequisites, Biological Sciences 101-102 or 103-104 and introductory chemistry. Intended primarily for under-

graduates, 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 9-11:30. Staff.

Designed to acquaint the student with the general principles of plant physiology. Topics such as water relations, photosynthesis, translocation, respiration, mineral nutrition, growth, and reproduction are studied in detail. Particular emphasis is placed, both in laboratory and classroom, on the discussion of principles and their application to plants. This introductory course in plant physiology is intended to give students a first appreciation of modern aspects of the subject and to serve as the basis for more advanced study.

341. TAXONOMY OF VASCULAR PLANTS

Fall term. Credit four hours. Prerequisite, a course in botany. Lectures and discussions, T Th 9. Laboratory, T Th 2-4:30. Mr. Clausen.

An introduction to the classification of vascular plants, with attention to principles, methods of identification, and literature. In the first part of the term, field trips are held in laboratory periods.

343. BIOLOGY OF THE ALGAE

Fall term. Credit three hours. Prerequisites, Biological Sciences 101-102 or 103-104 or permission of the instructor. Lectures, M W 11. Laboratory, M or F 2-4:30. Mr. Kingsbury.

Structure, ecology, physiology, relationships, evolution, and economic uses are presented as appropriate to a detailed understanding of the bluegreen, green, yellowgreen, golden brown, and euglenoid algae. Living material of a large number of genera is provided in laboratory to illustrate lecture topics, to demonstrate characteristics of algae of potential value in research on general biological problems, to provide practice in techniques of isolation and culture, and to develop a working familiarity with the local algal flora. Biologically important characteristics of ponds and streams are brought out in relation to the algae populating them.

344. BIOLOGY OF THE ALGAE

Spring term. Credit three hours. Prerequisites, Biological Sciences 101-102 or 103-104 or permission of the instructor. Lectures, T Th 11. Laboratory, M 2-4:30 or F 2-4:30. Mr. Kingsbury.

A continuation of 343, covering the diatoms, dinoflagellates, brown, and red algae and emphasizing the characteristics of the marine environment. Need not be preceded by 343.

COMPARATIVE MORPHOLOGY OF FUNGI

(See Plant Pathology 309.)

345. PLANT ANATOMY

Fall term. Credit four hours. Prerequisites, Biological Sciences 101-102 or 103-104; preregistration with instructor in charge. Lectures, T Th 8. Laboratory T Th 10-12:30 or M W 2-4:30. Mr. Bierhorst.

A detailed study of plant histology with equal emphasis on developmental aspects and mature structure.

347. CYTOLOGY

Fall term. Credit four hours. Prerequisites, Biological Sciences 101-102 or 103-104 or the equivalent. Lectures, M W 9. Laboratory, M W or T Th 10-12:30. Mr. Uhl.

The principal 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.

348. MICROTECHNIQUE

Spring term. Credit two hours. Prerequisites, Biological Sciences 101-102 or 103-104 and permission to register. Hours to be arranged. Mr. Uhl.

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

349. PLANTS AND MAN

Fall term. Credit two hours. Prerequisites, Biological Sciences 101-102 or 103-104 or the equivalent. Lectures, M W 9. Mr. Bates.

A consideration of the role of plants in the human environment and in the evolution of human culture with emphasis on the utilization of plants in nutrition, housing, clothing, medical care, industry, and the arts.

440. CYTOGENETICS

Spring term. Credit three hours. Prerequisites, Biological Sciences 347 and 281 or the equivalent. Lectures, M W 9. Laboratory, M or W 10-12:30. Mr. Uhl.

An advanced course dealing mainly with the cellular mechanisms of heredity and including recent researches in cytology, cytogenetics, and cytotaxonomy.

442. TAXONOMY AND ECOLOGY OF VASCULAR PLANTS

Spring term. Credit four hours. Prerequisite, Biological Sciences 341. Lectures and discussions, T Th 9. Laboratory, T Th 2-4:30. Mr. Clausen.

A study of the principles of classification, the fundamentals of geographical distribution, and the evolutionary importance of environmental variation. Laboratory periods in the second half of the term are devoted to study of natural populations in the field.

[444. MORPHOLOGY OF LOWER VASCULAR PLANTS]

Spring term. Credit four hours. Given in alternate years. Prerequisites, Biological Sciences 345 and preregistration with instructor in charge. Lectures, M W 12. Laboratory, M W 2-4:30. Mr. Bierhorst. Not given in 1966-67.

446. MORPHOLOGY OF HIGHER VASCULAR PLANTS

Spring term. Credit four hours. Given in alternate years. Prerequisites, Biological Sciences 345 and preregistration with instructor in charge. Lectures, M W 12. Laboratory, M W 2-4:30. Mr. Bierhorst.

An advanced course in the comparative morphology, life histories, and phylogeny of the seed plants, including consideration of structure, development and morphogenesis as applied to morphological interpretation.

[448. PALEOBOTANY]

Spring term. Mr. Banks. Not given in 1966-67.

449. RESEARCH IN BOTANY

Either term. Credit and hours to be arranged. Staff.

Students engaged in special problems or making special studies may register in this course. They must satisfy the instructor under whom the work is taken that their preparation warrants their choice of problem.

541-542. PLANT PHYSIOLOGY, ADVANCED LECTURE COURSES

Fall and spring terms. Credit three hours a term. Primarily for graduate stu-

dents, but undergraduates will be admitted by prior approval of instructor. Prerequisite, Biological Sciences 240 or its equivalent; Biological Sciences 541 is a desirable but not a required prerequisite for 542. Lectures, M W F 10. Mr. Steward.

Fall term: cells and cell physiology; properties of protoplasm, its membranes and organelles; relations of cells, tissues, and organs to water and solutes; water relations and stomatal behavior; inorganic plant nutrition; the essential nutrient elements. Spring term: plant metabolism and organic nutrition (photosynthesis, respiration, nitrogen metabolism); translocation; physiology of growth and development.

543-544. PLANT PHYSIOLOGY, ADVANCED LABORATORY

Fall and spring terms. Credit four hours a term. Prerequisites, Biological Sciences 240 or equivalent, and Biological Sciences 541-542 (may be taken concurrently). Primarily intended for graduate students, but undergraduates may be admitted by prior approval of the instructor. Laboratory, M W or T Th 1:40-5:00. Recitation, F 2-3. Preregistration strongly recommended. Staff.

The first term is concerned with modern methods. The second term is concerned with their application to special problems in plant physiology.

ADVANCED MYCOLOGY

(See Plant Pathology 549 and 559.)

641. SEMINAR IN TAXONOMY AND ECOLOGY OF VASCULAR PLANTS

Fall term. Credit one hour. Prerequisite, Biological Sciences 442. Lecture and discussion, M 12. Mr. Clausen.

An examination of primary problems concerned with the classification and environmental relationships of vascular plants.

643. SEMINAR IN PLANT PHYSIOLOGY

Fall and spring terms. Credit one hour per term. Required of graduate students taking work in plant physiology and open to all who are interested, F 11. Staff.

Discussion of current problems in plant physiology; presentation of reports on the research of graduate students and members of the staff. The course may be repeated for credit.

CURRENT TOPICS IN MYCOLOGY

(See Plant Pathology 649.)

Ecology, Evolution, and Systematics

270. BIOLOGY OF THE VERTEBRATES

Spring term. Credit four hours. Prerequisites, Biological Sciences 101-102 or 103-104. Lectures, M W 10. Laboratory, M W 2-4:30 or T Th 2-4:30. Mr. Layne.

An introduction to the evolution, systematics, distribution, life-history and ecology, and behavior of vertebrate animals. Laboratory and field work deal with structure, classification, taxonomic methods, and the ecology, behavior and life histories of local species. Special laboratory and field exercises are devoted to selected aspects of vertebrate life.

INSECT BIOLOGY

(See Entomology 212.)

PLANT TAXONOMY

(See courses 341, 442, 641.)

361. GENERAL ECOLOGY

Either term. Credit three hours. Prerequisites, Biological Sciences 101-102 or 103-104 or the equivalent. Lectures, T Th 9. Discussion, W or Th 2, 3, or 4. Mr. Pimentel and Mr. Root.

Principles which govern the survival of plants and animals in their natural environment are discussed. Population dynamics are studied with attention given to competition, social behavior, predation, parasitism, and other biotic interactions. Consideration is given to the flow of energy and minerals through living systems and to the influence of climate on the abundance and distribution of organisms. The role of species diversity, dispersal, and succession are focused on with regard to natural communities. The organization of species populations and communities is interpreted in the light of modern evolutionary theories.

362. LABORATORY AND FIELD ECOLOGY

Either term. Credit two hours. Prerequisite, permission of instructor. Laboratory, T Th 2-4:30. Mr. Cole and others.

A laboratory and field course to accompany or follow Biological Sciences 361, for students who intend to concentrate in the area of ecology. Enrollment limited. This course will give the students a firsthand contact with ecological techniques.

SOIL MICROBIOLOGY

(See Agronomy 306.)

371. INVERTEBRATE ZOOLOGY

Fall term. Credit four hours. Prerequisite, at least one year of biological science; others by permission of instructor. Lectures, W F 11. Laboratory, W F 2-4:20. Mr. Anderson.

Lectures on selected topics in the development, structure, function, and interrelations of invertebrate animals, with particular attention to phylogenetic aspects. Intensive laboratory work in representative invertebrates, utilizing living or fresh specimens wherever possible. A significant amount of independent work is required of each student, including reports on library research.

INTRODUCTORY INSECT TAXONOMY

(See Entomology 331.)

INTRODUCTORY PARASITOLOGY

(See Entomology 351.)

BIOLOGY OF THE ALGAE

(See courses 343, 344.)

374. FIELD MARINE BIOLOGY

Credit two hours. Prerequisite, a full year of college biology. A special course offered on Star Island, off Portsmouth, New Hampshire, June 11-25, 1966. Mr. Kingsbury, with the help of Messrs. Anderson, Gilbert, Hewitt, Raney and Barlow.

Living material and habitats will be emphasized in introducing students to the major disciplines of marine biology and in rounding out the student's knowledge of these topics as presented at inland locations. For more details, see the *Announcement of the Summer School*.

460. MARINE ECOLOGY

Spring term. Credit three hours. Prerequisites, Biological Sciences 101-102 or 103-104 and chemistry and physics. Lectures, M W F 9. Mr. Barlow.

Introduction to biological oceanography; the sea as an environment; physical and chemical characteristics of marine habitats, relation to biogeography; organic production, biochemical cycles and distribution of non-conservative properties; relation of hydrography to fisheries and distribution of populations, oceanographic aspects of pollution problems.

461. OCEANOGRAPHY

Fall term. Credit three hours. Prerequisites, introductory chemistry and physics. Lectures, T Th 10. Laboratory, Th 12-12:50. Mr. Barlow.

Introduction to physical and chemical aspects of the oceans: geography and structure of ocean basins; origin and physical properties of seawater; distribution of salinity and temperature, heat and water budgets, formation of water masses; circulation, waves and tides; shore processes, formation and distribution of sediments; discussion of current problems in oceanography. Laboratory work in organization and analysis of oceanographic observations.

462. LIMNOLOGY

Spring term. Credit four hours. Prerequisites, Biological Sciences 361, organic chemistry, and one year of college physics or permission of instructors. Lecture, W F 11. Laboratory, F 2-5; S 9-12. Messrs. Vallentyne and Hall.

A study of processes and mechanisms in the biology, chemistry and physics of inland waters taught from a functional and analytic point of view. Laboratories devoted to both field studies and experiments on model systems.

462A. LIMNOLOGY, LECTURES

Spring term. Credit two hours. Prerequisites, Biological Sciences 361, organic chemistry, and one year college physics, or permission of instructors. Lecture, W F 11. Mr. Vallentyne and Mr. Hall.

The lecture portion of course 462.

470. ICHTHYOLOGY

Spring term. Credit four hours. Prerequisites, Biological Sciences 270 or the equivalent. Lectures, M W 9. Laboratory, F 2-4:30 and S 9-11:30. Mr. Raney.

Lectures on the biology of fishes including systematics, ecology, life history, behavior, and literature. Laboratory studies of the orders, major families, and principal genera, and of systematic procedures. Field studies of the ecology and life history of local species.

471. MAMMALOLOGY

Fall term. Credit four hours. Prerequisites, Biological Sciences 270 or equivalent work in vertebrate biology and permission of instructor. Lectures, T Th 10. Laboratory, F 2-4:30 and S 9-11:30. Mr. Layne.

Lectures on various aspects of mammalian biology, including evolution, distribution, systematics, ecology, behavior, and physiology. Laboratory and field work on the ecology, behavior, and life histories of local mammals; the taxonomy of recent mammals, with emphasis on the North American fauna; and special topics.

472. ORNITHOLOGY

Spring term. Credit four hours. Prerequisites, Biological Sciences 270 or equivalent work in vertebrate biology and permission of instructor. Lectures, M W 11. Laboratory, M W 2-4:30.

Lectures on various aspects of the biology of birds, including structure, classification, adaptations, behavior, distribution, ecology, and physiology. Laboratory and field studies on the identification, ecology, and behavior of local species; classification; structure; molts and plumages; and other aspects of avian biology.

475. EVOLUTIONARY THEORY

Fall term. Credit four hours. Prerequisites, Biological Sciences 281 and one of the following courses: Biological Sciences 270, 371, 341, 343, or 344; or Entomology 212; or Plant Pathology 309; or consent of instructor. Lectures, T Th 11. Discussion, Th 12. Mr. Brown.

Lectures and class discussions on organic evolution, with primary emphasis on the mechanisms of speciation and adaptation.

476. ADVANCED INVERTEBRATE ZOOLOGY

Spring term. Credit four hours. Prerequisites, Biological Sciences 371 or equivalent, and permission of instructor; enrollment limited. Lectures, W F 11. Laboratory, W F 2-4:20. Mr. Anderson.

Lectures and seminars (involving student participation by means of prepared reports) on significant problems in invertebrate zoology; laboratory and field work on selected invertebrate groups.

479. RESEARCH IN ECOLOGY, EVOLUTION, AND SYSTEMATICS

Either term. Credit and hours to be arranged. Prerequisite, permission of the professor under whom the work is to be taken. Staff.

Practice in planning, conducting, and reporting independent laboratory and/or library research programs.

[561-562. QUANTITATIVE ECOLOGY]

Throughout the year. Credit four hours a term. Given alternate years. Prerequisites, one year of biology and permission of the instructor. Organic chemistry and some college mathematics are desirable. Lectures, M W 11. Laboratory, W 2-4:30. Mr. Cole. Not offered in 1966-67.

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.

563. PLANT ECOLOGY

Fall term. Credit four hours. Prerequisite, Biological Sciences 361 or the equivalent. Primarily for graduate students. Lectures, M W F 10.

Lectures and seminars on species and community organization, competition, laws of growth, and succession, and on the measurement, analysis and interpretation of biogeochemical cycles and the flow of energy in plant communities.

[564. BIOGEOCHEMISTRY]

Spring term. Credit four hours. Prerequisites, Biological Sciences 361, one year of geological science, organic chemistry and permission of instructor. Lectures, T Th S 9. Laboratory, M or T 2-4:30. Mr. Valleryntyne. Not offered in 1966-67.

565. SPECIAL TOPICS IN LIMNOLOGY

Fall term. Credit three hours. Prerequisite, consent of instructor. Hours to be arranged. Mr. Vallentyne, and Mr. Hall.

A laboratory and seminar course designed primarily for graduate students. Advanced discussion and experimentation in specific topics in limnology. Content variable from year to year, but in general dealing with topics related to the production and metabolism of biological associations in inland waters.

ADVANCED INSECT TAXONOMY

(See Entomology 531, 532, 533, 534.)

ADVANCED PARASITOLOGY: PROTOZOA AND HELMINTHS

(See Entomology 551.)

661. SEMINAR IN POPULATION AND COMMUNITY ECOLOGY

Fall term. Credit one hour. Prerequisites, a course in ecology and permission of instructor. Lecture, M 7:30 p.m. Mr. Root.

Discussion of recent advances in population and community ecology. The topic for 1966 will be ecological biogeography. Participants will present reports on the determinants of species diversity, convergent evolution, distribution of life-forms, barriers to dispersal, and related subjects. This course may be repeated for credit.

Genetics and Development

280. HUMAN GENETICS

Spring term. Credit three hours. Prerequisites, Biological Sciences 101-102 or 103-104. Lectures, M W 10. Discussion, F 10. Mr. Srb.

An introduction to biological heredity through consideration of the genetics of man. Advances in the science of genetics are having a profound effect on man's understanding of himself and on his potential for influencing his present and future well-being. The course is intended primarily to contribute to the student's general education in these matters, and although certain aspects of genetics will be considered with some rigor, the course is not designed to serve as a prerequisite to advanced courses in genetics.

281. GENETICS

Either term. Credit four hours. Prerequisites, Biological Sciences 101-102 or 103-104. Lecture, M W F 8. Laboratory, M T W Th or F 2-4, or T or Th 8-10. Mr. Stinson and assistants.

A general study of the fundamental principles of genetics. Discussions of gene transmission, gene action and interaction, gene linkage and recombination, gene structure, gene and chromosome mutations, genetic aspects of differentiation, genes in populations, breeding systems, extrachromosomal inheritance. Animals, plants and microorganisms are used in the laboratory, which also includes an independent study of inheritance in *Drosophila*.

CYTOLOGY

(See course 347.)

385. ANIMAL EMBRYOLOGY

Fall term. Credit four hours. Prerequisite, Biological Sciences 281 (genetics). Lectures, W F 11. Laboratory, W F 8-10:30 or 2-4:30. Mr. Blackler.

A course in general animal embryology with equal emphasis on the physio-

logical as well as the morphological basis of early development. Vertebrate development is treated on a comparative basis.

CYTOGENETICS

(See Course 440.)

480. POPULATION GENETICS

Spring term. Credit three hours. Prerequisites, Biological Sciences 281 or the equivalent. Lectures, T Th 11. Mr. B. Wallace.

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

482. PHYSIOLOGICAL GENETICS

Spring term. Credit three hours. Prerequisites, Biological Sciences 281 and a course in organic chemistry. Lectures, M W 8. Mr. Srb.

The nature and activities of chromosomal and nonchromosomal genetic material are considered in relation to the functional attributes of organisms.

MICROBIAL GENETICS

(See course 495.)

486. PLANT DEVELOPMENT

Spring term. Credit one hour. Prerequisites, Biological Sciences 101-102 or 103-104. Not open to students who have taken Biological Sciences 444-446 or 541-542. Lectures, M W F 10 (for five weeks only). Mr. Steward and Mr. Bierhorst.

The course will deal with problems of growth, development, and morphogenesis, with special reference to plants. There will be 15 lectures delivered in five weeks. These lectures constitute a portion of Biological Sciences 444-446 and 541-545; students who specifically require a short course in plant development may register for 486.

489. RESEARCH IN GENETICS AND DEVELOPMENT

Either term. Credit and hours to be arranged. Prerequisite, permission of the professor under whom the work is to be taken. Staff.

Practice in planning, conducting, and reporting independent laboratory and/or library research programs.

584. EXPERIMENTAL EMBRYOLOGY

Spring term. Credit three hours. Prerequisite, Biological Sciences 385. Lecture, T 11. Laboratory T Th 2-4:30. Mr. Blackler.

An advanced course in animal development in which stress is laid on practical manipulations carried out by the students. Every student will have an opportunity to repeat for himself some of the classical and modern experiments and techniques.

Microbiology

290. GENERAL MICROBIOLOGY

Either term. Credit five hours. Prerequisites, Biological Sciences 101-102 or 103-104 and Chemistry 104 or 108 or the equivalent. Lectures, M W F 11. Laboratory, M W 2-4:30; T Th 8-10:30 or 2-4:30. Mr. Seeley (fall), Mr. Van Demark (spring).

An introductory course; a study of the basic principles and relationships

in the field of microbiology, with fundamentals necessary to further work in the subject.

The course offering in the spring term will provide special emphasis on the application of microbiology in home economics and agriculture.

290A. GENERAL MICROBIOLOGY, LECTURES

Either term. Credit three hours. Prerequisites, Biological Sciences 101-102 or 103-104 and Chemistry 104 or 108 or the equivalent. Lectures, M W F 11. Mr. Seeley (fall), Mr. VanDemark (spring).

The same as the lecture part of course 290. Will not serve alone as a prerequisite for advanced microbiology courses.

290B. GENERAL MICROBIOLOGY, LABORATORY

Either term. Credit two hours. Mr. Seeley (fall), VanDemark (spring).

The same as the laboratory part of Course 290. May be taken only by special permission of the instructor.

390. ADVANCED BACTERIOLOGY

Spring term. Credit four hours. Prerequisites, Biological Sciences 290 and organic chemistry and permission of instructor. Lectures, M W 7 p.m. Laboratory, T Th 1:40-4:30. Mr. MacDonald.

A comparative study of the physiological and ecological relationships among the bacteria. Among the topics discussed will be cell anatomy, cellular control mechanisms, ecology, taxonomy and autotrophy. Special emphasis will be placed on those groups of bacteria outside of the Eubacteriales. Laboratory emphasis will be on the technique for isolation, cultivation and rigorous study of various groups of bacteria. Emphasis will be on independent work and several laboratory reports will be required.

390A. ADVANCED BACTERIOLOGY, LECTURES

Spring term. Credit two hours. Prerequisites, Biological Sciences 290 and organic chemistry. Lectures, M W 7 p.m. Mr. MacDonald.

This course is the same as the lecture portion of 390, except that the permission of the instructor is not required.

[393. APPLIED AND INDUSTRIAL MICROBIOLOGY]

Fall term. Credit three hours. Given in alternate years. Prerequisites, Biological Sciences 290 or the equivalent. Lectures, T Th 11, S 10, Messrs. Delwiche, Seeley, VanDemark. Not offered in 1966-67.

394. DAIRY AND FOOD MICROBIOLOGY

Spring term. Credit four hours. Prerequisite, Biological Sciences 290. Lectures, M W 12. Laboratory, M W 1:40-4:30. Mr. Naylor.

The major families of microorganisms of importance in dairy and food science are studied systematically with emphasis on the role played by these organisms in food preservation, food fermentations, and public health. The laboratory work includes practice in the use of general and special methods for microbiological testing and control of dairy and food products as well as practice in the isolation and characterization of organisms found in foods.

396. PHYSIOLOGY OF BACTERIA

Spring term. Credit three hours. Prerequisites, Biological Sciences 290 and at least one semester of organic chemistry. Lectures, T Th 10. Mr. Delwiche.

The course is concerned with the functions of microorganisms, primarily bacteria. Particular consideration is given to the dynamics of the growth process, the nutrition and energy metabolism of the developing cultures,

and the effects of the physical and chemical environments on the growth process. Primarily the treatment is concerned with the eubacteria, but consideration is given to other microbial forms when appropriate to an integrated treatment of the subject matter.

SOIL MICROBIOLOGY

(See Agronomy 306.)

PATHOGENIC BACTERIOLOGY

(See Veterinary Medicine 340.)

493. MORPHOLOGY AND CYTOLOGY OF BACTERIA

Fall term. Credit three hours. Prerequisite, permission of instructor. Lectures, T Th S 9. Mr. Knaysi.

Morphology, cytology, and microchemistry of microorganisms.

495. MICROBIAL GENETICS

Fall term. Credit four hours. Prerequisites, Biological Sciences 281 and 290 or permission of the instructor. For upperclassmen and graduate students. Lecture, W 7:30-9:30 p.m. Laboratory, T 1:40-4:30 and other hours to be arranged. Mr. Zahler.

Genetics of bacteria and their viruses, with emphasis on the mechanisms of genetic phenomena.

495A. MICROBIAL GENETICS, LECTURES

Fall term. Credit two hours. Prerequisites, Biological Sciences 281 and 290 or 290A. For upperclassmen and graduate students. Lecture W 7:30-9:30 p.m. Mr. Zahler.

The course is the same as the lecture portion of Biological Sciences 495.

496. CHEMISTRY OF MICROBIAL PROCESSES

Spring term. Credit two hours. Prerequisites, beginning courses in general microbiology, biochemistry, and organic chemistry. Course intended for upperclassmen and graduate students. Lectures, M W 11. Mr. Delwiche.

Selected topics pertaining to the energy metabolism, oxidative and fermentative abilities, and biosynthetic capacities of microorganisms. Where possible and appropriate the subject matter deals with the various microbial forms in a comparative sense.

498. VIROLOGY

Spring term. Credit three hours. Given in alternate years. Prerequisites, Biological Sciences 290 and 281 and permission of the instructor. Lectures, T Th S 11. Mr. Naylor, with help of Mr. Ross and Mr. Carmichael.

A study of the basic physical, chemical, and biological properties of plant, animal and bacterial viruses.

499. RESEARCH IN MICROBIOLOGY

Either term. Credit and hours to be arranged. Staff.

For advanced students of high academic standing. A program of research projects in various aspects of basic microbiology.

590. METHODS IN ADVANCED BACTERIOLOGY

Spring term. Credit four hours. Given in alternate years. Prerequisite, permission of instructor. Limited enrollment. Hours to be arranged. Mr. MacDonald.

Intended primarily for graduate students. Intended to acquaint advanced

students with some of the more important techniques used in the study of bacterial physiology. Emphasis will be placed on the use of radioisotopes; growth, structure, and function of cells.

ADVANCED SOIL MICROBIOLOGY

(See Agronomy 506.)

699. MICROBIOLOGY SEMINAR

Fall and spring terms. Without credit. Th 4:15. Staff.

Required of graduate students majoring in microbiology and open to all who are interested.

CHEMISTRY

Mr. H. A. Scheraga, Chairman; Messrs. A. C. Albrecht, S. H. Bauer, A. T. Blomquist, J. M. Burlitch, R. A. Caldwell, W. D. Cooke, R. C. Fay, M. E. Fisher, J. H. Freed, D. H. Geske, M. J. Goldstein, W. M. Gulick, G. C. Hammes, J. L. Hoard, R. Hoffmann, R. E. Hughes, E. Kostiner, 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.

A major in chemistry permits considerable flexibility in the detailed planning of a course program. The required courses can be completed in three years, leaving the senior year open for advanced and independent work in all areas of chemistry: physical, organic, inorganic, analytical, theoretical, bio-organic, biophysical. A major in chemistry can also provide the necessary basis for significant work in related areas such as molecular biology, chemical physics, geochemistry, chemical engineering, solid state physics, and medicine.

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 normally register for general chemistry (preferably Chemistry 115-116), mathematics, a freshman humanities course, and a foreign language or, in some instances, physics. Students who are not prepared to begin their programs with Chemistry 115-116 may choose an alternate sequence Chemistry 107-108, 236, or Chemistry 103-104, 205, 236, for general chemistry. In the second year the student should complete calculus, take physics, organic chemistry, begin physical chemistry and complete a course in Distribution I. Physical chemistry would be completed in the third year along with courses in advanced inorganic and analytical chemistry, Distribution I, and Distribution II. Advanced work in chemistry and related subjects could be pursued in the fourth year. The opportunity for independent research is also available. All students with questions about details of a major program are encouraged to consult with the chairman of the department or his representative. Entering students exceptionally well prepared in chemistry may receive advanced placement credit for Chemistry 107-108 and proceed to a more advanced program.

Prerequisites to admission to a major in chemistry are (1) Chemistry 115-116, or 107-108 and 236, or 103-104, and 236; (2) Physics 207; and (3) Mathematics 111. A student is not encouraged to undertake a major in chemistry unless he has passed the above courses at a good level of proficiency. Students are encouraged to complete Chemistry 279 in their underclass years.

For a major in chemistry the following courses must be completed: (1) Chemistry 357-358, 279, 387-388, 339, and 410; (2) Mathematics 112, 213; (3) Physics 208; and (4) Russian 101 or 301-302, or preferably, German 101 or 301-302, unless two units of either language have been offered for entrance. Advanced courses in physics and mathematics are recommended as electives for students who intend to continue for an advanced degree in chemistry.

The major defined in the *Announcement* for 1964-65 and 1965-66 is applicable to the classes graduating 1966-69.

The Honors program in chemistry offers the superior student an opportunity to do independent 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 B and permission of the Department. Prospective candidates for Honors should discuss their plans with their advisers by March 1 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 requirement 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) 279, 380, 389, and 390; or (5) 353-355, 279, 389, and 390.

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, 339, 426, 433, 525, 527.

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

Physical and Theoretical: 276, 279, 285-286, 380, 387-388, 389-390, 474, 477, 481, 578, 580, 586, 589, 593, 595, 596, 598.

Bio-organic: 568, 572, 582.

Bio-physical: 577, 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 C—, this course serves as a 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. Caldwell, Freed, and Assistants.

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

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 900. Lectures, T Th 9, 10, or 12. 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. Fay, Kostiner, 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 scheme of qualitative analysis.

Note: Entering students exceptionally well prepared in chemistry may receive advanced credit for Chemistry 107-108 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.

115-116. GENERAL CHEMISTRY AND INORGANIC QUALITATIVE ANALYSIS

Throughout the year. Credit four hours a term. Prerequisite, high school chemistry at a grade of 90 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 150. Fall term: lectures, M W F 12; one three-hour combined discussion-laboratory period, T or Th 10-1, W or F 8-11, or W or F 1:40-4:30. Spring term: Lectures, M W 12; two three-hour combined discussion-laboratory periods, T Th 10-1, W F 8-11, or W F 1:40-4:30. Messrs. Burlitch, Plane, and Assistants.

An intensive, systematic study of the laws and concepts of chemistry, with considerable emphasis on mathematical aspects. Laboratory work will cover both qualitative and quantitative analysis.

205. QUALITATIVE INORGANIC ANALYSIS AND IONIC EQUILIBRIUM

Fall term. Credit four hours. Prerequisite, Chemistry 104 with a grade of C— or better. Lectures, M W 12. Laboratory, T Th 1:40-4:30 or T Th 8-11.

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 Advanced Placement in Chemistry. 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. Mr. Gulick 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.

279. PHYSICAL CHEMISTRY I

Spring term. Credit four hours. Prerequisites, Chemistry 116 or 236, Mathematics 112, and Physics 207. Chemistry 279 is the first course of a three-semester sequence (279, 387-388) required of chemistry majors in the Class of 1970 and thereafter. Lectures M W F 10. Mr. Bauer.

Fundamental concepts in atomic and molecular theory; the origins of quantum theory, atomic spectra, elementary wave mechanics, quantum chemistry, and molecular structure.

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 T or W Th 1:40-4:30, or F 1:40-4:30 and S 10:00-12:30; spring term, M T 1:40-4:30 or W Th 1:40-4:30. Messrs. Lind, Widom, 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.

[339. ADVANCED ANALYTICAL CHEMISTRY]

Fall term. Credit four hours. Prerequisite or parallel course, Chemistry 387. Required of candidates for the degree of A.B. with a major in chemistry. Lectures, M W F 9. Laboratory, one afternoon per week, to be arranged.

A discussion of the broad aspects of modern analytical chemistry including application of molecular, atomic, and nuclear spectroscopy, electrochemistry, radiochemistry, and separations. Not offered in 1966-67

353. ELEMENTARY ORGANIC CHEMISTRY

Either term. Credit four hours. Prerequisite, Chemistry 104 at a grade of C—, 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, Mr. Goldstein.

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 1:40-4:30, or F 1:40-4:30 and S 8-10:50. Mr. Goldstein 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 8-10:50. Mr. Goldstein 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, or Advanced Placement in Chemistry. 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 11. Laboratory: M W or T Th 1:40-4:30, or T Th 8-10:50, or F 1:40-4:30 and S 8-10:50 (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, or Physics 443 or consent of instructor. Lectures, T Th S 9. Mr. Hoffmann.

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. In 1968-69 and following years, Chemistry 279 will be prerequisite to Chemistry 387. 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, Porter, 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. Zuckerman.

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. Burlitch, Fay, Kostiner, Plane, Porter, 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. Morrison and Assistants.

A discussion of the broad aspects of modern analytical chemistry, including opticomeric, 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.

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. Not offered in 1966-67.

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, Caldwell, 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. 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 1966-67.

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. Hammes 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. Fall term, Mr. Zuckerman. Spring term, Mr. Porter.

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. Porter and Sienko.

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. For 1966-67, topics will be Boron Chemistry and Solid State Chemistry.

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. Offered in alternate years; not offered in 1966-67.

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. Caldwell.

Mechanisms of organic reactions, with particular attention paid to the properties of reactive intermediates: carbonium ions, carbanions, free radicals, carbenes, and electronically excited molecules.

[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. Not offered in 1966-67.

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. Usher.

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 1966-67.

572. ORGANIC MECHANISMS RELATED TO ENZYME CATALYSIS

Spring term. Credit four hours. Prerequisites, Chemistry 357-358 or equivalent, 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.

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. Not offered in 1966-67.

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. Hoard.

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 9. Mr. Hammes.

Principles and theories of chemical kinetics; special topics including fast reactions in liquids, enzymatic reactions, shock tubes and molecular beams.

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. Mr. Mandelkern.

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. Given in alternate years. Not offered in 1966-67.

593. QUANTUM MECHANICS I

Fall term. Credit four hours. Prerequisites, Chemistry 279 and Physics 303 (or co-registration in Physics 319) or their equivalents, and co-registration in Mathematics 421 (or equivalent), or consent of instructor. Lectures, M W F 11. Mr. Widom.

Bohr-Sommerfeld theory, Schrödinger equation, wave packets, uncertainty principle, WKB theory, matrices, orbital and spin angular momentum, exclusion principle, perturbation theory, variational principle, Born-Oppenheimer approximation. At the level of Bohm, *Quantum Theory*.

594. QUANTUM MECHANICS II

Spring term. Credit four hours. Prerequisite, Chemistry 593 or its equivalent. Lectures, M W F 11. Mr. Freed.

Time-dependent phenomena in quantum mechanics and interaction with radiation. Group theory and applications. Topics in molecular quantum mechanics.

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. Fisher.

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. SELECTED TOPICS IN PHYSICAL CHEMISTRY]

Either term. Credit two or four hours.

Detailed consideration is given to special topics selected from the field of theoretical and experimental physical chemistry. Topics are varied from year to year. Not offered in 1966-67.

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. Usher.

700. BAKER LECTURES

T Th 11. Fall term: Dr. E. Katchalski, Weizman Institute, Israel.

THE CLASSICS

Mr. G. M. Kirkwood, Chairman; Messrs. H. Caplan, P. H. DeLacy, J. Hutton, Miss Elizabeth Milburn, Messrs. 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 Greek and Latin (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 all courses listed below under Classical Civilization, also ancient philosophy, Hebrew, Sanskrit, and selected courses in modern foreign languages and literatures, Comparative Literature, and Linguistics.

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) Comparative 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 antiquity 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 hours required for the major study. Students who wish to become candidates for Honors and who have a cumulative average of B— or better should consult some member of the Department before pre-registering 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. Robertson. Spring term, Mr. Pucci.

Continuation of Greek 101, and readings in Plato or Xenophon.

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

Either term. Credit three hours. Prerequisite, Greek 103. Fall term T Th S 10, Mr. Pucci. Spring term T Th S 9, Mr. Spofford.

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. Fall term T Th S 9, Miss Milburn. Spring term M W F 12, Mr. Kirkwood.

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. Fall term, W 2. Spring term, 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. Kirkwood. Spring term, Mr. Spofford.

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. DeLacy.

309-310. ADVANCED GREEK COMPOSITION

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

401-402. INDEPENDENT STUDY

For qualified majors.

571-572. SEMINAR

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

Fall term: Plato's *Phaedrus*. Spring term: Aristotle's *Poetics*.

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, 10.

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 10. 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. Hutton, Miss Milburn.

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. Robertson and Spofford.

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

205-206. REPUBLICAN AND GOLDEN AGE LITERATURE

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

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. Fall term: one or more of the plays of Terence; the poetry of Catullus. Spring term: Livy, and either the *Eclogues* and *Georgics* of Virgil or the *Satires* and *Epistles* of Horace.

221-222. LATIN COMPOSITION

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

Throughout the year. Credit four hours a term. Prerequisite, Latin 205-206. M W F 10. Offered in 1966-67 and alternate years. Fall term, Mr. Pucci. Spring term, Mr. DeLacy.

Works by Plautus, Cicero, Sallust, and Lucretius will be studied.

[317-318. LITERATURE OF THE EARLY EMPIRE]

Throughout the year. Credit four hours a term. Prerequisite, Latin 205-206. Not offered in 1966-67. Offered in 1967-68 and alternate years.

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.

369. MEDIEVAL LATIN LITERATURE

Spring term. Credit four hours. Prerequisite, three years of high school Latin or the equivalent. Hours to be arranged. Mr. Caplan.

451-452. INDEPENDENT STUDY

For qualified majors.

581-582. SEMINAR: HORACE

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

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

220. INTRODUCTION TO CLASSICAL ARCHAEOLOGY

Spring term. Credit three hours. M W F 9. Miss Milburn.

History of Classical Archaeology with emphasis upon contributions of Archaeology to our understanding of ancient Greece.

319. PRECLASSICAL GREECE

Fall term. Credit four hours. T Th S 11. Miss Milburn.

Greece, Crete and the Cyclades from the Neolithic period to the end of the Bronze Age.

320. ARCHAEOLOGY OF CLASSICAL GREECE

Spring term. Credit four hours. T Th S 11. Miss Milburn.

Study of principal monuments of ancient Greece from the end of Bronze Age to the Hellenistic period.

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.)

[408. CLASSICAL RHETORIC AND ORATORY]

Spring term. Credit four hours. Primarily for graduate students. Not offered in 1966-67.

ENGLISH TRANSLATIONS OF GREEK AND LATIN CLASSICS

(See Comparative Literature 313-314.)

FOUNDATIONS OF WESTERN THOUGHT

(See Comparative Literature 323.)

HUMANISM AND THE RENAISSANCE

(See Comparative Literature 332.)

PRINCIPLES OF LITERARY CRITICISM

(See Comparative Literature 401.)

GREEK AND ROMAN DRAMA

(See Comparative Literature 404.)

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.)

ORIGINS OF WESTERN POLITICAL THOUGHT

(See Government 462.)

COMPARATIVE LITERATURE

Mr. B. E. Pike, Chairman; Mr. P. M. de Man, Acting Chairman; Messrs. M. H. Abrams, B. B. Adams, R. M. Adams, H. D. Albright, G.-P. Biasin, E. A. Blackall, H. Caplan, A. Caputi, Miss Patricia Carden, Mr. M. A. Carlson, Miss Alice Colby, Mr. D. Connor, Mrs. Marianne Cowan, Messrs. P. H. DeLacy, H. Dieckmann, J. M. Echols, S. B. Elledge, J. A. Finch, G. Gibian, P. A. Gottschalk, D. I. Grossvogel, G. H. Hartman, M. Horwitz, J. Hutton, R. E. Kaske, G. M. Kirkwood, J. W. Marchand, E. P. Morris, I. Rabinowitz, F. C. Robinson, K.-L. Selig, H. Shadick, W. D. Shaw, E. W. Spofford, A. L. Udovitch.

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.

Related courses: consult the offerings in Classics, English, German,

Romance Studies, Russian, Semitic Studies, Asian Studies, History, Philosophy, the Fine Arts, Music, and Speech and Drama.

101-102. FRESHMAN SEMINAR IN WESTERN LITERATURE

Credit three hours a term. Each section limited to 20 freshmen.

Informal discussion in small sections of selected great books of the Western tradition. Special emphasis on writing. The reading list will consist of such works as: (fall term) *The Iliad*, selections from the Bible, *The Divine Comedy*, *Paradise Lost*, and *Faust*; (spring term) Greek tragedies, *King Lear*, plays by Molière, *Madame Bovary*, *Notes from the Underground*, stories by Kafka, and *The Stranger*.

103-104. FRESHMAN SEMINAR IN GERMAN LITERATURE

Credit three hours a term. Enrollment limited to 40 freshmen. T Th S 9. Mr. Connor, Mrs. Cowan.

Discussion and reports in small sections, with special emphasis on written work. Texts will be read in translation. Topic Fall term: modern drama. Works by Büchner, Ibsen, Hauptmann, the Expressionists, Brecht, Dürrenmatt. Topic Spring term: the short story and novel from Romanticism to the present, including works by Kleist, E. T. A. Hoffmann, Thomas Mann and Kafka.

201-202. WESTERN LITERATURE

Throughout the year. Credit three hours a term. May not be taken by students who have had 101-102. Each section limited to 20 students. M W F 9, 10, 11, T Th S 9, 10, 11. Mrs. Herz and others.

Informal discussion in small sections of selected great books of the Western tradition. Fall term: the *Iliad*, the *Aeneid*, selections from the Bible, *The Divine Comedy*, *Paradise Lost*, and *Faust*. Spring term: Greek tragedies, *Don Quixote*, *King Lear*, plays by Molière, *Madame Bovary*, *Notes from the Underground*, stories by Kafka, and *The Stranger*.

207-208. RUSSIAN LITERATURE

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

Readings in English translation. Fall term: Russian legends, chronicles, stories, and works by Griboedov, Pushkin, Gogol, Leskov, Aksakov, and Turgenev. Spring term: Dostoevsky, Tolstoy, Saltykov, Chekhov, Babel and Sholokhov.

300. THE LITERATURE OF THE OLD TESTAMENT

Fall term. Credit four hours. 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.

[301. THE LITERATURE OF POST-EXILIC ISRAEL]

Spring term. Credit four hours. M W F 9. Mr. Rabinowitz. Not offered in 1966-67.

302. THE LITERATURE OF THE NEW TESTAMENT

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

A study of selected aspects of the New Testament. Readings in translation.

313-314. 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. Mr. Hutton.

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.

323. 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.

327-328. MEDIEVAL LITERATURE

Throughout the year. Credit four hours a term. M W F 12. Fall term, Mr. Kaske. Spring term, instructor to be announced.

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: To be announced.

332. HUMANISM AND THE RENAISSANCE

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

Readings in translation from Petrarch, Erasmus, Ariosto, Rabelais, Tasso, Montaigne, and others, designed to bring out typical ideas and attitudes of the Renaissance period. Attention will be given to such topics as fifteenth-century humanism, neo-Latin literature, Ciceronianism, Renaissance Platonism, theories of poetry, the influence of the Counter-Reformation.

337-338. 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. Gottschalk.

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.

345-346. 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. Changing theories and techniques of theatrical production in the important stylistic periods from the Greeks to the present will be traced.

351-352. THE MODERN EUROPEAN NOVEL

Throughout the year. Credit four hours a term. M W F 12. Fall term, Mr. Frederick. Spring term, instructor to be announced.

Readings by such authors as Richardson, Sterne, Austen, Balzac, Stendhal, Goethe, Flaubert, Dostoevsky, Tolstoy, Proust, Kafka and Mann.

[357. FORM AND EXPRESSION IN THE ARTS OF THE TWENTIETH CENTURY]

Fall term. Credit four hours. T Th S 10. Not offered in 1966-67.

[358. IDEA AND FORM IN TWENTIETH-CENTURY EUROPEAN LITERATURE]

Spring term. Credit four hours. T Th S 10. Not offered in 1966-67.

367. THE RUSSIAN NOVEL

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

Works by Turgenev, Dostoevsky, and Tolstoy.

[368. SOVIET LITERATURE]

Spring term. Credit four hours. M W F 10. Mr. Horwitz. Not offered in 1966-67.

[371. CHINESE HISTORICAL AND PHILOSOPHICAL LITERATURE IN TRANSLATION]

Fall term. Credit three hours. M W F 10. Mr. Shadick. Not offered in 1966-67.

372. CHINESE IMAGINATIVE LITERATURE IN TRANSLATION

Fall 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.

[380. SOUTHEAST ASIAN LITERATURE IN TRANSLATION]

Fall term. Credit four hours. T 2-4. Mr. Echols. Not offered in 1966-67.

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).

[402. THE ENLIGHTENMENT IN GERMANY, FRANCE AND ENGLAND]

Spring term. Credit four hours. M W F 11. Mr. Dieckmann. Not offered in 1966-67.

404. GREEK AND ROMAN DRAMA

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

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 comedy, their connection with myth and ritual and with other literary forms, and to the ancient theater and its stage.

[407. VARIATIONS ON A LITERARY THEME]

Fall term. Credit four hours. M W 11. Mr. R. Adams. Not offered in 1966-67.

409. POST-SYMBOLIST POETRY

Fall term. Credit four hours. M W F 10. Mr. de Man.

A study of the poetry of Rimbaud, Yeats and Trakl. Reading knowledge of either French or German required.

411. MODERN GERMAN LITERATURE

Spring term. Credit four hours. M W F 11. Mrs. Cowan.

Nietzsche, the man and the artist. An intensive study of his major works and of his position as a key figure in regard to twentieth century problems. All reading in English translation.

414. MODERN ITALIAN LITERATURE

Spring term. Credit four hours. M 2-4. Mr. Biasin.

A thematic study of such authors as Verga, Svevo, Pirandello, Tomasi di Lampedusa, Basani, Pavese, and Moravia. Readings, lectures, and discussion in English.

416. MYTH AND LITERATURE

Spring term. Credit four hours. Enrollment limited to 35 upperclassmen and graduate students. M W F 9. Mrs. Siegel.

An examination of theories of myth as well as writers who treat myth as a form of literature. Emphasis will be on the relevance of myth to literature, with some reference to criticism. Texts will include works of Frazer, Jung, Campbell, Harrison, and Eliade.

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. de Man.

Fall term: The theme of Narcissus in nineteenth-century literature. Spring term: Topic to be announced.

506. STUDIES IN RENAISSANCE MYTHOGRAPHY

Spring term. Credit four hours. Permission of instructor required. T 4-6. Mr. Selig.

Critical analysis of major Renaissance treatises on mythography, with special reference to their relationship to emblem literature, certain aspects of iconography, and the treatment of some mythological themes in selected literary texts.

515. ELEMENTS OF NEO-CLASSIC TASTE

Fall term. Credit four hours. Primarily for graduate students in Comparative Literature and English; a few qualified undergraduates may be admitted. Enrollment limited to 20. M W F 11. Mr. Robert Adams.

Successive waves of inspiration from Greek and Roman antiquity, to be studied through selected dramas, odes, satires, and imitations, from the Renaissance forward, in connection with illustrative materials from the plastic arts.

522. EUROPEAN ROMANTICISM

Fall term. Credit four hours. Hours to be arranged. Mr. de Man or Mr. Hartman.

A study of selected aspects of European Romanticism. Reading knowledge of French or German required.

526. SEMINAR ON THE NOVEL

Spring term. Credit four hours. T 2-4. Mr. Dieckmann.

Forms and theories of the novel in eighteenth-century France, Germany, and England, involving a comparative study of representative works from the three literatures. Reading knowledge of French or German required.

DIDEROT (See French 549.)

Comparative Literature: Medieval Studies

For complete information on the following courses, consult the offerings in Classics, English, German, Romance Studies, History, and Philosophy.

CLASSICS

369. MEDIEVAL LATIN LITERATURE. Mr. Caplan.

ENGLISH

366. CHAUCER. Mr. Kaske.

406. THE EARLIEST ENGLISH LITERATURE. Mr. Robinson.

501. READINGS IN OLD ENGLISH. Mr. Robinson.

503. MIDDLE ENGLISH. Mr. Kaske.

554. BEOWULF. Mr. Robinson.

556. CHAUCER. Mr. Kaske.

558. STUDIES IN MEDIEVAL LITERATURE. Mr. Kaske.

560. MEDIEVAL DRAMA. Mr. B. Adams.

FRENCH

415-16. LITERATURE OF THE MIDDLE AGES. Miss Colby.

417. POETRY OF THE FIFTEENTH CENTURY. Mr. Brogyanyi.

GERMAN

405. INTRODUCTION TO MIDDLE HIGH GERMAN. Mr. Puryear.

406. MIDDLE HIGH GERMAN LITERATURE. Mr. Puryear.

511. SAGAS.

512. EDDAS.

521. MIDDLE HIGH GERMAN LITERATURE I.

522. MIDDLE HIGH GERMAN LITERATURE II. Mr. Marchand.

524. GERMAN POETRY OF THE LATE MIDDLE AGES. Mr. Dallett.

ITALIAN

313-314. DANTE.

433. OLD ITALIAN TEXTS. Mr. Hall.

SPANISH

411. INTRODUCTION TO MEDIEVAL LITERATURE. Mr. Selig.

432. LA CELESTINA. Mr. Selig.

HISTORY

303-304. MEDIEVAL HISTORY. Mr. Tierney.

335. MEDIEVAL CULTURE 400-1150. Mr. John.

336. MEDIEVAL CULTURE 1150-1300. Mr. Tierney.

437. CHURCH AND STATE DURING THE MIDDLE AGES. Mr. Tierney.

438. FRANCE IN THE HIGH MIDDLE AGES. Mr. Tierney.

637-638. SEMINAR IN MEDIEVAL HISTORY. Mr. Tierney.

639-640. SEMINAR IN LATIN PALEOGRAPHY. Mr. John.

PHILOSOPHY

303. MEDIEVAL PHILOSOPHY. Mr. Kretzman.

580. SEMINAR IN MEDIEVAL PHILOSOPHY. Mr. Kretzman.

COMPUTER SCIENCE

COLLEGES OF ENGINEERING AND
ARTS AND SCIENCES

Mr. J. Hartmanis, Chairman; Messrs. R. W. Conway, P. C. Fischer, C. Pottle, G. Salton, S. Saltzman, R. J. Walker.

Computer science is a relatively new field of study that draws on and contributes to a number of existing disciplines such as mathematics, engineering, linguistics, and psychology, among others. Developments in this field are also used to make important contributions in research, development, design, and management activities in the various functional areas of engineering and applied science.

At Cornell, computer science is concerned with fundamental knowledge in automata, computability, and language structure, as well as with subjects such as numerical analysis and information processing which underlie broad areas of computer applications. Because of the wide implications of research in the field, the Department of Computer Science is organized as an intercollege department in the College of Engineering and the College of Arts and Sciences.

There is as yet no formal undergraduate major in this department. The student who is interested in the mathematical aspects of computer science can major in mathematics and choose mathematics Option I or Option II, including Computer Science 421-422 (Numerical Analysis), and then select fifteen hours of computer science courses including 301.

201. SURVEY OF COMPUTER SCIENCE

Spring term. Credit three hours.

Introduction to the structure and use of the modern digital computer. This course is intended to be a non-mathematical treatment of the material, and emphasis is on non-numeric computer applications such as information retrieval, language processing, and artificial intelligence. A limited introduction to programing in a problem-oriented language is included.

301. INTRODUCTION TO COMPUTER SCIENCE

Spring term. Credit three hours. Prerequisite, Mathematics 293 or equivalent. T Th 8, M T Th or F 2-4:30.

Introduction to programing and programing systems. Computer organization and characteristics. Survey of computer applications. Intended for science majors and engineering students, who should have mathematics to a level comparable to Mathematics 293. Students without this background should take CS 201. Students interested primarily in programing should ordinarily take CS 311.

311. DIGITAL COMPUTER PROGRAMING

Through the year. One or two credit hours. Prerequisite, consent of instructor. T Th 11, W 2-4:30. Messrs. Rudan and Bessel.

The first half of the term is concerned with FORTRAN programing and operating procedures; the second half with assembly language programing. The two sections are independent and a student can register for one credit hour and take either the first or second, or register for two credit hours and take both sections.

321. NUMERICAL CALCULUS

Fall term. Credit four hours. Prerequisite, Mathematics 213 or equivalent. M W F 9.

The computational aspects of calculus and related mathematics are discussed in the light of modern computing machines. Topics include numerical differentiation and integration, solution of algebraic and differential equations, interpolation, and simple error analysis of these processes. The student is expected to know CORC, the Cornell computing language.

401. INTRODUCTION TO COMPUTER SCIENCE

Fall term. Credit four hours. Prerequisite, Mathematics 293 or equivalent. M W F 10, Th 2-4:30.

An introductory course similar in coverage to 301 but more intensive in treatment. Intended principally for students who are majoring in computer science.

411. PROGRAMING SYSTEMS AND THEORY I

Fall term. Credit four hours. Prerequisite, 301 or equivalent. M W F 10.

Concerned with assembly-level and machine-level programing of large-scale digital computing systems. Will consider principles and techniques involving indirect addressing, index registers, input-output control, program interrupts, storage allocation, magnetic tape and disc auxiliary storage, diagnostic methods and routines. Also, advanced programing systems for executive control. Students will program problems for the Control Data 1604-160A at the Cornell Computing Center.

412. PROGRAMING SYSTEMS AND THEORY II

Spring term. Credit four hours. Prerequisite, 411 or equivalent. M W F 10.

Concerned with theory and techniques of programing languages and

programing systems for large-scale digital computer systems. Will consider programing aspects of time-sharing, multiprograming, real-time, and satellite systems. Also, the structure and form of different types of programing languages including assemblers, interpreters, compilers, and list processors. Basic techniques for scanning, ordering, and translating will be covered. Students will design and implement several simple programming languages during the term.

417. ADVANCED INFORMATION PROCESSING

Fall term. Credit four hours. Prerequisite, 401 or equivalent experience. M W F 9. Mr. Salton.

Provides a theoretical foundation in information processing, with emphasis on the use of computers for the solution of primarily nonnumeric problems. Covered are recent developments in processor organization and processing methods, compiling and translating systems, search and sorting techniques. Students will run individual term projects on the available computing equipment.

421. NUMERICAL ANALYSIS

Fall term. Credit four hours. Prerequisite, Mathematics 222 or 294 or the equivalent and Computer Science 301, or consent of instructor. M W F 9. Mr. Walker.

Covers essentially the same topics as Computer Science 321 but in a more complete fashion and with more emphasis on error analysis and mathematical rigor.

422. NUMERICAL ANALYSIS

Spring term. Credit four hours. Prerequisite, 421 or consent of instructor. M W F 9. Mr. Walker.

Numerical methods in matrix analysis and the solution of partial differential equations.

435. INFORMATION ORGANIZATION AND RETRIEVAL

Spring term. Credit four hours. Prerequisite, 401 or equivalent. T Th 9, occasionally W 2-4. Mr. Salton.

Covers all aspects of automatic language processing on digital computers, with emphasis on applications to information retrieval. Analysis of information content by statistical, syntactic and logical methods. Dictionary techniques. Automatic retrieval systems, question-answering systems. Evaluation of retrieval effectiveness.

481. FORMAL LANGUAGES

Spring term. Credit four hours. Prerequisite, 401, 485-486, 488 or consent of instructor.

A study of formal languages, their processing and processors. Topics include regular, context-free, and context-sensitive languages; their recognition, parsing, algebraic properties, decision problems, recognition devices, and applications to computer and natural languages.

485-486. THEORY OF AUTOMATA I and II

Throughout the year. Credit four hours. Prerequisite, Computer Science 401, Mathematics 481 or consent of instructor. M W F 11. Mr. Hartmanis.

Automata theory is the study of abstract computing devices; their classification, structure and computational power. Topics include finite state machines, regular expressions, pushdown-automata, linear bounded automata, context free and context sensitive languages, Turing machines and the study of computational complexity.

488. THEORY OF EFFECTIVE COMPUTABILITY

Spring term. Credit four hours. Prerequisite, Computer Science 401, 485, Mathematics 481, or consent of instructor.

Turing machines and Church's Thesis, universal Turing machines, unsolvability of the halting problem. Recursively enumerable sets, productive and creative sets, relative computability, the recursion theorem, Post's problem. Computational complexity hierarchies.

490. SPECIAL INVESTIGATIONS IN COMPUTER SCIENCE

Throughout the year. Credit and sessions to be arranged.

Offered to qualified students individually or in small groups. Directed study of special problems in the field of computer science. (Register only with the registration officer of the department.)

491. COMPUTER SCIENCE GRADUATE SEMINAR

Throughout the year. Credit one hour. For graduate students interested in computer science. W 4:30-6:00. Staff, visitors and students.

A weekly meeting for the discussion and study of important topics in the field.

DATA PROCESSING SYSTEMS (Given as Business & Public Administration 901)

Spring term. Credit three hours. M W F 8.

An introductory course in modern data processing systems for graduate students not in computer science. Considers problems and techniques associated with using modern data-handling systems in various organizational environments such as industry, government, and hospitals. Includes an introduction to data-handling equipment, programing, and applications. Considers control and decision functions as well as routing operations. Emphasis is more on problem analysis and system planning than on programing although students will have programs run at the Cornell Computing Center.

ADVANCED DATA PROCESSING SYSTEMS (Engineering 9583)

Fall term. Credit 3 hours. Prerequisite, Computer Science 301 or BPA 901 or consent of instructor.

Concerned with design of integrated data processing systems for operational and financial control: questions of system organization, languages and equipment appropriate to this type of application, file structures, addressing and search problems, sorting techniques; problems of multiple-remote-input, on-line data processing systems; techniques of system requirement analysis.

DIGITAL SYSTEMS SIMULATION (Engineering 9580)

Fall term. Credit three hours. Prerequisite, Computer Science 301 and a course in probability.

The use of a program for a digital computer to simulate the operating characteristics of a complex system in time. Discussion of problems encountered in construction of a simulation program; synchronization and file maintenance, random number generation, random deviate sampling. Programing in the CLP and SIMSCRIPT languages. Problems in the design of effective investigations using simulation; statistical considerations when sampling from a simulated process. Applications of simulation to queuing, storage, traffic, and feedback systems. Applications will include use in the design of facilities, design of operating disciplines, and use in real-time control of an operating system.

SWITCHING SYSTEMS I (Electrical Engineering 4587)

Fall term. Credit three hours. Prerequisite, Electrical Engineering 4322 or consent of instructor.

Switching algebra; switching devices; logical formulation and realization of combinational switching circuits; minimization aids; number representation and codes; simple memory devices; synchronous sequential circuits; counters; shift registers, and arithmetic units in a digital computer.

SWITCHING SYSTEMS II (Electrical Engineering 4588)

Spring term. Credit three hours. Prerequisite Electrical Engineering 4587 or equivalent.

Synchronous and asynchronous sequential circuits, formulation and optimization; large-scale memory units, selection and control; further discussion of arithmetic units; integrated study of switching systems including general-purpose digital computer, control switching, and communication switching; introduction to the general theory of learning machines.

AUTOMATA (Theoretical and Applied Mechanics 900)

Spring term. Credit three hours. Prerequisite, Mathematics 294 or 222 or equivalent. M W F 12.

Both the engineering and mathematical aspects of automata will be introduced. Examples of mathematical topics: finite-state machines, neural nets, input-output machines, Turing machines, computability. Examples of engineering topics: machines that learn, adaptive systems, pattern recognition, self-reproducing and self-repairing machines, system reliability, threshold logic systems, biological models, heuristic programing, industrial and technological applications, progress in devices, automatic language translation, cybernetics and robots.

ECONOMICS

Mr. F. H. Golay, Chairman; Messrs. G. P. Adams, Jr., S. E. Berki, A. Chiang, M. G. Clark, T. E. Davis, M. G. de Chazeau, F. Dill, D. F. Dowd, W. D. Evans, L. M. Falkson, J. C. H. Fei, H. Fleisig, W. Galenson, G. H. Hildebrand, J. G. B. Hutchins, A. E. Kahn, R. W. Kilpatrick, J. R. La Pittus, T. C. Liu, C. Morse, P. M. O'Leary, R. T. Selden, T. Sowell, G. J. Staller, B. P. Stigum, J. Vanek, G. M. von Furstenberg.

Students wishing to major in economics must have completed both Economics 103 and Economics 104 and, moreover, must have averaged at least C in these two courses. Students who have completed only Economics 103 may be provisionally accepted, but only if they have obtained a grade of B— 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 B— 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. Large lectures, plus two additional discussion sections (scheduled throughout the week). Fall term: M W 9, T Th 9, 11. Messrs. Adams, Fei, Selden and Assistants. Spring term: T Th 10. Mr. Selden 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. Large lectures, plus two additional discussion sections (scheduled throughout the week). Fall term: T Th 9, Mr. Morse and Assistants; Honors section, Mr. Sowell, M W F 11. Spring term: M W 9, T Th 9, 11, Messrs. Chiang, Kahn, Staller and Assistants; Honors sections, hours to be arranged.

Economics 104, a continuation of 103, centers on the determinants of ag-

gregate 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. Falkson. 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 instructor. M W F 10. Mr. Dowd. Not offered in 1966-67.

322. ECONOMIC HISTORY OF MODERN EUROPE

Spring term. Credit four hours. Prerequisite, same as for 321. M W F 10. Mr. Dill.

An examination and analysis of significant processes and relationships in the economic development of Europe from the close of the Middle Ages to the present. Attention will be given to reciprocal relationships between the social and political context and the behavior of the economy over time.

323. AMERICAN ECONOMIC HISTORY

Fall term. Credit four hours. Prerequisites, Economics 103-104 or consent of the instructor. T Th S 11. Mr. Fleisig.

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 S 11. Mr. Fleisig. 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.

A survey, emphasizing the processes and problems of economic growth and the evolution of economic institutions.

ECONOMIC AND BUSINESS HISTORY (Business and 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 9. Mr. La Pittus.

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. T Th S 10. 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 11. Mr. von Furstenberg.

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. T Th S 10. Mr. Kilpatrick.

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

ECONOMICS OF WAGES AND EMPLOYMENT (Industrial and Labor Relations 241)

Spring term. Credit three hours. Prerequisite, Economics 103-104. Mr. Hildebrand and others.

An introduction to the characteristics of the labor market and to analysis of wage and employment problems. Among topics studied are the composition of the labor force, job-seeking and employment practices, methods of wage determination, theories of wages and employment, economic effects of unions, the nature and causes of unemployment, and programs to combat joblessness and poverty.

442. ECONOMICS AND PROBLEMS OF LABOR

Spring term. Credit four hours. Prerequisite, Economics 103-104. ILR 241 recommended. M W F 11. Mr. Hildebrand.

An advanced course concerning the institutional organization of labor markets, economic analysis of their operation, and major policy questions involved. Principal topics include wage and employment theory; determinants of wage level and structure; technological change; unemployment; poverty and income distribution; inflation and incomes policy.

See also Economics 311, 413, 641-642.

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. Kahn.

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 REGULATIONS (Business and 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 and 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.

HEALTH ECONOMICS (Business and Public Administration 142)

Fall term. Credit three hours. Hours to be arranged. Mr. Berki.

Considers the provision of medical care as an economic activity. Individual, family, and national expenditures for medical care are studied in relation to the various factors which influence them, including supply and demand, unit costs, utilization rates, and traditional and evolving patterns of distribution. The principles underlying commercial health insurance, non-profit prepayment and service plans, and health programs under social security and public welfare are analyzed. Government programs of health care in this country, existent and proposed, are analyzed and compared with experiences with similar programs in foreign countries.

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 9. Mr. Staller.

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. T Th S 9. Mr. La Pittus.

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 1966-67.

[365. COMPARATIVE ECONOMIC SYSTEMS: JAPAN, INDIA, CHINA]

Spring term. Credit four hours. M W F 9. Mr. Golay. Not offered in 1966-67.

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. Mr. Golay.

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 11. 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 9, M W F 10, T Th S 9, T Th S 10. Messrs. Berki, Chiang, Kilpatrick, Morse. Spring term: M W F 9. Mr. Berki.

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: T Th S 9. Mr. Fleisig. Spring term: M W F 9, M W F 12, M W F 2, T Th S 9. Messrs. Dill, Kilpatrick, Sowell, von Furstenberg.

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: M 2-4. Spring term: M 2-4. Mr. Adams.

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 four hours. M W F 10. Mr. Sowell.

A survey of economic doctrines of unorthodox or dissenting persuasion and a study of movements of social protest and of various types of economic organization that have been proposed or attempted. Among the matters considered: classical economic doctrines; the forerunners of Marx; Marxian theories and predictions; politics and economics of Collectivism, Anarchism, British Fabianism and the Welfare State, and Communism; pricing and resource-allocation problems in different types of economic organization.

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. Hours to be arranged. Mr. Fei.

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 meas-

urements 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 F 2. 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. Hours to be arranged. Mr. Sowell.

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. Hours to be arranged. Messrs. Hildebrand and 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

SEMINAR IN THE WELFARE ECONOMICS OF HEALTH SERVICES (Business and Public Administration 452)

Spring term. Credit three hours. Prerequisite, consent of the instructor. Hours to be arranged. Mr. Berki.

511. PRICE AND ALLOCATION THEORY

Fall term. Credit four hours. Prerequisite, consent of the instructor. Hours to be arranged. Messrs. Chiang and Hildebrand.

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. Messrs. Selden and 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. Dill.

523-524. AMERICAN ECONOMIC HISTORY

Throughout the year. Credit four hours a term. Hours to be arranged. Mr. Fleisig.

561-562. INTERNATIONAL ECONOMIC THEORY AND POLICY

Throughout the year. Credit four hours a term. Hours to be arranged. Messrs. von Furstenberg and La Pittus.

565. ECONOMIC PROBLEMS OF LATIN AMERICA

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

571-572. ECONOMIC GROWTH AND DEVELOPMENT

Throughout the year. Credit four hours a term. Hours to be arranged. Messrs. Golay and Morse.

610. ADVANCED MICROECONOMIC THEORY

Spring term. Mr. Chiang.

612. ADVANCED MACROECONOMIC THEORY

Fall term. Mr. Vanek.

613-614. HISTORY OF ECONOMIC THOUGHT

Throughout the year. M 2-4. Mr. Adams.

[615. BUSINESS CYCLES AND GROWTH]

Fall term. Mr. Selden. Not offered in 1966-67.

616. INTERMEDIATE MATHEMATICAL ECONOMICS

Spring term. M W 2-3:15. Mr. Evans.

617-618. MATHEMATICAL ECONOMICS

Throughout the year. Mr. Stigum.

619-620. ECONOMETRICS

Throughout the year. Mr. Stigum.

SEMINAR IN ECONOMIC STATISTICS (Industrial and Labor Relations 610)

Fall term. Mr. Evans.

[621-622. EUROPEAN ECONOMIC HISTORY]

Throughout the year. Mr. Dowd. Not offered in 1966-67.

[623. AMERICAN ECONOMIC HISTORY]

Fall term. Mr. Fleisig. Not offered in 1966-67.

631-632. MONETARY THEORY AND POLICY

Throughout the year. Messrs. Selden and La Pittus.

634. FINANCIAL THEORY, HISTORY, AND POLICY

Spring term. Th 2-4. Mr. O'Leary.

635-636. PUBLIC FINANCE: THEORY AND POLICY

Throughout the year. Messrs. Kilpatrick and von Furstenberg.

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. Messrs. Galenson and Hildebrand.

651-652. INDUSTRIAL ORGANIZATION AND REGULATION

Throughout the year. Mr. Kahn. Offered only in fall term, 1966-67.

[661-662. INTERNATIONAL ECONOMICS]

Throughout the year. Mr. Vanek. Not offered in 1966-67.

663-664. ADVANCED INTERNATIONAL ECONOMICS

Throughout the year. Mr. Vanek.

671-672. ECONOMICS OF DEVELOPMENT

Throughout the year. Messrs. Golay and Morse.

673-674. ECONOMIC PLANNING

Throughout the year. Mr. Staller. Offered only in spring term, 1966-67.

675. ECONOMIC GROWTH MODELS

Fall term. Mr. Fei.

676. THE ECONOMY OF CHINA

Spring term. Instructor to be announced.

[678. ECONOMIC GROWTH IN SOUTHEAST ASIA]

Spring term. Mr. Golay. Not offered in 1966-67.

679. THEORY OF ECONOMIC DEVELOPMENT

Spring term. Prerequisite, Economics 675. Mr. Fei.

ENGLISH

Mr. E. G. Fogel, 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. S. Burdick, A. Caputi, M. J. Colacurcio, G. F. Cronkhite, V. A. De Luca, D. D. Eddy, R. H. Elias, S. B. Elledge, F. G. Fike, J. A. Finch, D. H. Finlay, K. C. Frederick, B. H. Friedman, P. A. Gottschalk, G. H. Hartman, B. L. Hathaway, G. H. Healey, Mrs. Judith Herz, Mrs. Carol Kaske, Messrs. R. E. Kaske, M. Kaufman, D. W. Kleine, Miss Carol Marks, Messrs. R. W. Mayberry, D. McCall, J. R. McConkey, H. S. McMillin, Mrs. Dorothy Mermin, Messrs. F. E. Mineka, A. M. Mizener, D. Novarr, S. M. Parrish, F. C. Robinson, E. Rosenberg, W. M. Sale, Jr., W. D. Shaw, M. Shinagel, W. J. Slatoff, 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 C 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 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 345 or 346; or any pair of closely related upperclass courses. Some examples of such pairs of upper-

class courses follow: English 320 and 423, dealing with the same period of literary history; English 339 and 420 dealing with a single literary genre; English 329 or 330 and 475, 478, or 480, 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

As part of the new Freshman Humanities Requirement, the Department of English will offer twelve to fifteen one-semester courses, each to be conducted in small sections with limited enrollment. The courses will be concerned with various forms of writing (narrative, biographical, expository), with the study of specific areas in English and American literature, or with the relation of literature to culture. Students may elect any two of these courses during their first year as one means of satisfying the College freshman requirements. The courses will be described in detail in a supplementary brochure to be sent to all incoming freshmen later in the spring.

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 106 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

Fall term. Credit three hours. M W 12 or T Th 10, and conferences to be arranged. Sections limited to fifteen. Mr. Hathaway.

An introductory course in the practice of writing narrative, verse, and allied forms.

204. SPECIAL FORMS OF WRITING

Spring term. Credit three hours. Prerequisite, English 203 or consent of the instructor. 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 205 or consent of the instructor prerequisite to English 206. M W 9 or T Th 10, and conferences to be arranged. Mr. Mincka and others.

For sophomores and upperclassmen who, having performed creditably in a freshman course (or its equivalent), desire to carry on work in expository writing.

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. Kleine. Spring term, Mr. Frederick.

British and American writers. Fall term: Dreiser, O'Neill, Joyce, Yeats, Lawrence, Forester, and others. Spring term: Frost, Eliot, Auden, Huxley, Waugh, Hemingway, Faulkner, and others.

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, T Th S, 11. Mr. Bishop 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 not 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.

Two courses — English 344 and 345 — are especially designed for non-majors and may not be used by majors in satisfaction of the 24 hours of required upperclass courses. 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 SIXTEENTH CENTURY

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

The main traditions in English poetry from 1530 to 1603, with some atten-

tion to the prose of the period. Special emphasis on such figures as Wyatt, Sidney, Spenser, Marlowe, and Shakespeare.

311. THE LITERATURE OF THE SEVENTEENTH CENTURY

Fall term. Credit four hours. M W F 9. Mr. Robert Adams.

Poetry of Donne, Jonson, Marvell, Dryden; prose of Raleigh, Burton, Browne, Hobbes, and some pamphleteers.

315. SWIFT, POPE, AND THE LITERATURE OF THE EARLY EIGHTEENTH CENTURY

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

An introduction to neo-classicism and Augustan satire through a close reading of works by Dryden, Addison, Steele, Gay, Swift, Pope, and Fielding.

316. THE ENGLISH NOVEL IN THE EIGHTEENTH CENTURY

Spring term. Credit four hours. M W F 9. Mr. Shinagel.

The rise of the novel surveyed through a critical study of representative works by the five major novelists (Defoe, Richardson, Fielding, Sterne, and Smollett) as well as by some important predecessors (Nashe and Bunyan).

317. THE ROMANTIC POETS

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

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. Mineka.

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. Mr. Archibald. Not offered in 1966-67.

329. THE GROWTH OF AMERICAN LITERATURE

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

A survey of the important ideas and literary forms in American literature from the Puritan beginnings to the Civil War.

330. MAJOR AMERICAN WRITERS OF THE NINETEENTH CENTURY

Spring term. Credit four hours. Not open to students who have taken English 229 or 230. M W F 2. Mr. Bishop.

A survey of the important ideas and literary forms in American literature from the Civil War to the modern period.

[334. THE NEW WORLD AND THE OLD]

Spring term. Credit four hours. M W F 12. Mr. Strout. Not offered in 1966-67.

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.

337. THE NINETEENTH-CENTURY ENGLISH NOVEL

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

A critical study of English fiction from Jane Austen to Conrad.

339. REPRESENTATIVE ENGLISH DRAMAS

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

A study of the principal traditions in the English drama (excluding Shakespeare) from the Middle Ages to the present century.

DRAMA AND THEATRE

(See Comparative Literature 345-346.)

[343. FORMS OF FICTION]

Fall term. Credit four hours. Mr. Hathaway. Not offered in 1966-67.

345. SIX MAJOR POETS

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

A close reading of substantial selections from Donne, Jonson, Keats, Browning, Hopkins, and Frost.

346. MODERN DRAMA

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

A study of drama from Ibsen to the present day, including major continental playwrights, and giving special attention to Shaw, O'Casey, O'Neill, and Miller.

347. TWENTIETH-CENTURY LITERATURE

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

In 1966 the course will explore the modern Irish writers: the major works of Yeats, Joyce, and others seen against the background of "the Irish Situation."

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. Mizener.

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. T Th S 11. Mr. Novarr.

Study of Milton's poetry and selected prose, with emphasis on *Paradise Lost*.

[381. MODERN ENGLISH GRAMMAR]

Fall term. Credit four hours. Mr. Hathaway. Not offered in 1966-67.

383. THE ENGLISH LANGUAGE

Fall term. Credit four hours. M W F 9. 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. McConkey.

A course in the writing of fiction; study of models; analysis of students' work.

387. VERSE WRITING

Fall term. Credit four hours. Prerequisite, consent of the instructor. T Th 3-4:30. Mr. Ammons.

The techniques of poetry; study of models; criticism of students' poems; personal conferences.

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. Mr. Fike. Not offered in 1966-67.

410. SEVENTEENTH-CENTURY POETRY AND PROSE

Spring term. Credit four hours. T Th S 9. Miss Marks.

A mainly stylistic study of such writers as Donne, Herbert, Vaughan, Marvell, Crashaw, Browne, and Traherne, in an effort to articulate their individual distinctions and to examine their coherence as a group.

414. DR. JOHNSON AND THE LATER EIGHTEENTH CENTURY

Spring term. Credit four hours. M W F 12. Mr. Archibald.

A study of the prose and poetry of Dr. Johnson, of Boswell's *Life of Johnson*, and representative works of Burke, Goldsmith, Burns and others.

416. THE EARLY ROMANTICS

Spring term. Credit four hours. T Th S 9. Mr. De Luca.

The concept of creative imagination in Romantic literature through 1805 with emphasis on the works of Blake, Wordsworth, and Coleridge.

418. MASTERWORKS OF THE ROMANTIC PERIOD

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

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. ELIZABETH AND JACOBEAN DRAMA

Spring term. Credit four hours. M W F 9. Mr. Novarr.

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. M W F 10. Mr. Shaw.

The poetry of Tennyson, Browning, and Arnold, and a brief survey of the Pre-Raphaelites.

425. LATE VICTORIAN AND EDWARDIAN LITERATURE (1890-1914)

Fall 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.

428. THE VICTORIAN POLITICAL NOVEL

Spring term. Credit four hours. M W F 12. Miss Barish.

English politics and the novelist's art in works by Dickens, Gaskell, Eliot, Butler, and others.

439. STUDIES IN THE NOVEL

Fall term. Credit four hours. Prerequisite, English 336 and consent of the instructor. M W F 10. Mr. Sale.

A study of representative shorter American fiction.

[441. RESTORATION AND EIGHTEENTH-CENTURY DRAMA]

Fall term. Credit four hours. Mr. Eddy. Not offered in 1966-67.

443. EIGHTEENTH-CENTURY INTELLECTUAL PROSE

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

A study of selected works of Locke, Shaftesbury, Mandeville, Hume, Burke, and J. Warton.

449. AMERICAN POETRY SINCE 1896

Fall term. Credit four hours. T T S 11. Mr. Hathaway.

Main currents in American poetry of the first half of this century, with emphasis upon the revolt against tradition.

[466. SIXTEENTH-CENTURY POETRY AND PROSE]

Spring term. Credit four hours. Mr. Fogel. Not offered in 1966-67.

[468. ENGLISH LITERARY CRITICS]

Spring term. Credit four hours. Mr. Elledge. Not offered in 1966-67.

470. SHAKESPEARE

Spring term. Credit four hours. T Th S 10. Mr. Barry Adams.

An intensive study of three or four of Shakespeare's plays.

[472. RELIGION IN AMERICAN LITERATURE AND CULTURE]

Spring term. Credit four hours. Mr. Strout. Not offered in 1966-67.

473. THE POLITICAL NOVEL IN AMERICA

Fall term. Credit four hours. T Th S 10. Mr. Strout.

American politics and the art of fiction in such writers as Cooper, Adams, James, and Warren.

475. STUDIES IN AMERICAN LITERATURE

Fall term. Credit four hours. M W F 2. Mr. Bishop.

In 1966-67, a study of Hawthorne and James.

478. STUDIES IN AMERICAN LITERATURE

Spring term. Credit four hours. M W F 9. Mr. Colacurcio.

In 1966-67, pessimism and disillusion in the fiction of Melville and in various writings (fictional, autobiographical, historical) of Henry Adams.

480. STUDIES IN AMERICAN LITERATURE

Spring term. Credit four hours. T Th S 11. Mr. Slatoff.

In 1966-67, a close reading of the works of Whitman and Emily Dickinson.

[483. MODERN POETRY AND THE ROMANTIC TRADITION]

Fall term. Credit four hours. Mr. Hartman. Not offered in 1966-67.

486. STUDIES IN MODERN LITERATURE

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

A critical examination of selected prose and poetry.

490. MODERN THEORIES OF POETRY

Spring term. Credit four hours. Prerequisite, consent of the instructor. 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. Mr. Hathaway.

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)

Spring 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 their junior year; all others must see Miss Peard before registering.

SEMINAR IN AMERICAN STUDIES (American Studies 401-402)

Fall term, instructor to be announced. Spring term, Mr. Elias.

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. Mizener and others.

492. HONORS COURSE: SHAKESPEARE

Spring term. Credit four hours. T Th 2-4. Mr. Caputi and others.

493. HONORS ESSAY TUTORIAL

Fall term. Credit four hours. Hours to be arranged.

494. HONORS COURSE: THE CRITICISM OF POETRY

Spring term. Credit four hours. Three seminars M W 2-4; one seminar T Th 2-4. For admission to the T Th seminar students should apply to Mr. Mizener at preregistration. Mr. Abrams 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 501-535, are listed first, followed by spring term courses, with even numbers beginning with 552.

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. Not offered in 1966-67.

509. ELIZABETHAN-JACOBEAN DRAMA

Fall term. Credit four hours. Mr. McMillin.

In 1966-67, a study of dramatic form in four Jacobean playwrights: Jonson, Webster, the later Shakespeare, and Middleton.

511. EPIC AND ALLEGORY IN THE ENGLISH TRADITION

Fall term. Credit four hours. Miss Anderson.

Piers Plowman, *The Faerie Queene*, and *Paradise Lost*: the relation of satire to allegory, the development of characterization, the changing nature of the dream-world, and the function of the narrative voice. Emphasis will be on the poetry of Spenser.

515. STUDIES IN RENAISSANCE LITERATURE

Fall term. Credit four hours. Primarily for graduate students in Comparative Literature and English; a few qualified undergraduates may be admitted. Enrollment limited to 20. M W F 11. Mr. Robert Adams.

The elements of Neo-classic taste. Successive waves of inspiration from Greek and Roman antiquity will be studied through selected dramas, odes, satires, and imitations, from the Renaissance forward, in connection with illustrative material from the plastic arts.

517. STUDIES IN THE SEVENTEENTH CENTURY

Fall term. Credit four hours. Mr. Novarr.

Jonson and Dryden: drama, poetry, criticism.

* 519. THE ROMANTIC PERIOD

Fall term. Credit four hours. Mr. Abrams.

Structure and imagery in the longer Romantic poems.

521. VICTORIAN PROSE

Fall term. Credit four hours. Mr. Mineka.

Major emphasis upon writers of non-fictional prose, but with some attention to the novel.

523. THE NEW ENGLAND MIND, 1620-1860.

Fall term. Credit four hours. Mr. Colacurcio.

The major texts of Puritanism studied in relation to the literary productions of Emerson, Hawthorne, and Melville. The emphasis will be on varieties of Puritan inheritance.

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. Not offered in 1966-67.

[531. DRAMATIC LITERATURE]

Fall term. Credit four hours. Mr. Caputi. Not offered in 1966-67.

[535. AMERICAN FICTION]

Fall term. Credit four hours. Mr. Mizener. Not offered in 1966-67.

539. STUDIES IN AMERICAN LITERATURE

Fall term. Credit four hours. Mr. Elias.

Naturalism in the United States: its social and cultural context, its European and American beginnings, its expression in the theory and practice of such writers as Hamlin Garland, Stephen Crane, Frank Norris, Theodore Dreiser, and Jack London, and its relation to the work of Henry Adams, Gertrude Stein, and Sherwood Anderson.

547. GRAMMATICAL ANALYSIS

Fall term. Credit four hours. Mr. Hathaway.

Study of the structures of English revealed in the transformation of the basic components of predications.

549-550. CREATIVE WRITING

Throughout the year. Credit four hours a term. Mr. Hathaway.

552. INTRODUCTION TO ADVANCED RESEARCH

Spring term. Credit four hours. Mr. Novarr.

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.

560. MEDIEVAL DRAMA

Spring term. Credit four hours. Mr. Barry Adams.

Dramatic forms and traditions from the liturgical drama to the Elizabethan period.

* 562. SHAKESPEARE: THE ROMAN TRAGEDIES

Spring term. Credit four hours. Mr. Fogel.

Shakespeare's concepts of Rome and of tragic experience in a non-Christian context, as they are developed in *Julius Caesar*, *Antony and Cleopatra*, and *Coriolanus*. The Shakespearean plays will be compared with Roman tragedies by Daniel, Jonson, and other dramatists. Background readings in such historians as Plutarch, Suetonius, and Tacitus.

[564. SEVENTEENTH-CENTURY LITERATURE]

Spring term. Credit four hours. Not offered in 1966-67.

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 1966-67 the emphasis will be on the writings of Jonathan Swift.

[570. THE LATER EIGHTEENTH CENTURY]

Spring term. Credit four hours. Mr. Hartman. Will be offered in 1967-68.

* 572. WORDSWORTH

Spring term. Credit four hours. Mr. Parrish.

Critical and textual studies based upon the Dove Cottage manuscript archive.

574. VICTORIAN POETRY

Spring term. Credit four hours. Mr. Mineka.

Major emphasis upon Tennyson, Browning, and Arnold, but with some study of other Victorian poets.

580. STUDIES IN ENGLISH FICTION

Spring term. Credit four hours. Mr. Slatoff.

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. Not offered in 1966-67.

584. TWENTIETH-CENTURY FICTION

Spring term. Credit four hours. Mr. Kleine.

The emphasis will be on the novella as a form.

588. FORMS OF THE NOVEL

Spring term. Credit four hours. Mrs. Blackall.

In 1966-67 the course will deal with the experimental novels of Henry James.

[590. LITERARY CRITICISM]

Spring term. Credit four hours. Not offered in 1966-67.

598. MASTER'S ESSAY

Spring term. Credit four hours. Members of the Department.

GEOLOGICAL SCIENCES

(Geology, Geochemistry, Geobiology, Physical Geography, Applied Fields)

Mr. G. A. Kiersch, Chairman; Messrs. A. L. Bloom, W. S. Cole, W. E. LeMasurier, E. S. Lenker, E. D. McKee, S. S. Philbrick, J. W. Wells.

For admission to a major in geological sciences, students should complete Geology 101-102, Mathematics 111-112, and 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 camp in field geology. The classical aspects of geology, including field mapping, are integrated with experimental and theoretical studies to give a balanced view of geological science.

Students considering graduate study in the physical branches of geological science should select a distribution sequence from mathematics, physics, chemistry, or engineering; whereas those planning graduate study in aspects of geobiology should elect a distribution sequence of four courses in biological science.

The Distribution 1 requirement in Physical Sciences is satisfied in geological science by Geology 101-102.

Any of the following sequences are recommended for non-majors who wish to satisfy the Distribution II requirements in physical geography or general geology; 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.

Students wishing certification as earth science teachers must take courses in geological science in their Science Education program.

GEOGRAPHY, PHYSICAL

UNDERCLASS COURSES

111. EARTH SCIENCE

Fall term. Credit three hours (but see Earth Science Laboratory 113). Combine with Geography 212 for a survey of physical geography. 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.

212. MINERAL RESOURCES

Spring term. Credit three hours. Lectures, M W F 11. Mr. Lenker.

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; not offered in 1966-67.

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; offered in 1966-67.

Physical geography, regional climatology, land use, and natural resources of a selected continent or region. Topic for 1966-67: Latin America.

610. SPECIAL WORK

Throughout the year. Credit two hours a term. Prerequisite, consent of the instructor. Staff. Special or original investigations in physical geography on the graduate level.

General Geology

UNDERCLASS COURSES

PRINCIPLES AND PROCESSES

101-102. INTRODUCTORY GEOLOGICAL SCIENCE

Throughout the year. Geology 101 prerequisite to Geology 102. Credit three hours a semester.

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, S 8:30-11. Mr. Philbrick.

Designed to give general students a comprehensive understanding of the earth processes, features, and history. Provides the basic knowledge necessary for more specialized courses or a major in geological science.

Study of the earth, particularly materials, structure, internal condition, and the physical and chemical processes at work. Principles of interpretation of earth history, evolution of continents, oceans, mountain systems and other features; development of its animal and plant inhabitants.

[201. HISTORIC GEOLOGY]

Fall term. Credit three hours. Prerequisite, Geology 102.

Lectures M W 9. Laboratory, W 2-4:30. Mr. Wells. Alternate-year course. Not offered in 1966-67.

202. ANCIENT LIFE

Spring term. Credit three hours. No prerequisite, but Geology 102 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 revolution. Vertebrate forms from fish to man are stressed.

203. GEOLOGY FOR ENGINEERS

Fall term. Credit three hours.

Lectures, T Th 9. Laboratory T W or Th 2-4:30. A scheduled laboratory examination will be held at 7:30 p.m. the last week of the term. Field trips. Mr. Kiersch.

The principles of geological science with emphasis on the physical phenomena, rock properties, and historical events important in applied science. The cause and effect of geological problems encountered in the planning, construction, and operation of engineering works are analyzed in the laboratory.

UPPERCLASS AND GRADUATE COURSES

PHYSICAL PROCESSES

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, stresses, geomechanical 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. Lectures, M W 11. Laboratory, M 2-4:30, and additional laboratory work. Field trips. Mr. Kiersch. Alternate-year course; offered in 1966-67.

Source materials, mechanics of transport and dispersal, depositional environments, lithification and diagenesis of sediments. Analysis of common problems in applied science and engineering related to sedimentation processes and surficial deposits.

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 or consent of instructor. 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.

GEOCHEMISTRY: MINERAL MATERIALS AND PROCESSES

351. MINERALOGY

Fall term. Credit four hours. Prerequisite or parallel Geology 101, Chemistry 108. Lecture, M 10. Laboratories W F 2-4:30, and additional assigned problems. Mr. LeMasurier.

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. LeMasurier.

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. LeMasurier.

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. LeMasurier.

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; offered in 1966-67.

Distribution of major and minor elements in the earth, geochemical cycles of the elements, and chemistry of weathering and petrogenesis.

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; offered in 1966-67.

Theory and use of X-ray diffraction and spectroscopy in identification and analysis of minerals, rocks, and soils.

MINERAL DEPOSITS

461. MINERAL DEPOSITS: METALS

Fall term. Credit four hours. Prerequisites, Geology 102 or 203, 351. Lectures, M W F 10. Laboratory, F 2-4:30. Mr. Lenker.

Principles and processes involved in the formation of metalliferous 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.

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. Not offered in 1966-67.

563. ORE MICROSCOPY

Fall term. Credit two hours. Prerequisite, Geology 461. Laboratory, F S 8-10:30. Alternate-year course; offered in 1966-67.

Identification of ore minerals in polished sections with reflected light by etching and microchemical reactions; study and interpretation of mineral relationships.

Applied Geological Science

532. HYDROGEOLOGY

Spring term. Credit three hours. Prerequisites, Geology 322, 352; recommended Geology 421 and 441. Lectures T Th 11. Laboratory T 2-4:30, and field trips. Mr. Kiersch. Alternate-year course. Offered in 1966-67.

Hydrologic cycle and water provinces; occurrence, movement, quantity, and chemical quality of ground water in porous media. Water resources development.

[533. ENGINEERING GEOLOGY - THEORY]

Fall term. Credit three hours. Prerequisites, Geology 322, 352; recommend Geology 441. Lectures, M W 11. Laboratory, M 2-4:30, and field trips. Mr. Kiersch. Alternate-year course. Not offered in 1966-67.

582. EXPLORATION GEOLOGY

Spring term. Credit three hours. Recommended for all graduate students in geological science. Prerequisite, graduate standing and field geology. Lectures T Th 11. Laboratory, T 2-4:30. Messrs. Philbrick and Kiersch. Alternate-year course. Offered in 1966-67.

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.

Geobiology

PALEONTOLOGY AND STRATIGRAPHY

471. INVERTEBRATE PALEONTOLOGY

Fall term. Credit four hours. Prerequisites, Geology 102, and, if possible, invertebrate zoology. For those interested in fossil evidence of the development of organisms. Lectures, T Th 10. Laboratory, W Th 2-4:30. Messrs. Cole and Wells.

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. Not offered in 1966-67.

Seminars and Special Work

490. SENIOR THESIS

Either term. Credit one hour. Staff.

SEMINAR IN GEOLOGICAL SCIENCE

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 geological science; visiting lecturers.

690. SPECIAL WORK OR SEMINAR

Throughout the year. Credit two hours a term. Prerequisite, consent of the instructor. Staff.

Advanced work or original investigations in geological science on the graduate level.

Some special interests of the faculty are:

Analytical geochemistry and petrology: Mr. Lenker.

Volcanic petrology and geochemistry: Mr. LeMasurier.

Coastal geomorphology and Pleistocene geology: Mr. Bloom.
 Engineering geology, geomechanics, and hydrogeology: Mr. Kiersch.
 Invertebrate paleontology and geomorphology: Mr. Cole.
 Invertebrate paleontology and paleoecology: Mr. Wells.
 Sedimentology and primary structures: Mr. McKee.
 Physical and engineering geology, water resources: Mr. Philbrick.

GERMAN LITERATURE

Mr. O. J. Matthijs Jolles, Chairman; Messrs. E. A. Blackall, D. Connor, Mrs. Marianne Cowan, Messrs. J. B. Dallett, P. de Man, H. Deinert, Mrs. Else Fleissner, Messrs. B. E. Pike, 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. W. F. Berns, Chairman; Messrs. A. A. Altshuler, A. D. Bloom, H. W. Briggs, A. T. Dotson, M. Einaudi, A. Hacker, G. McT. Kahin, E. Kenworthy, J. W. Lewis, Miss Ruth McVey, Messrs. S. Muller, C. Rossiter, A. Rovine, M. Rush, A. P. Sindler.

For a major in government the following courses must be completed: (1) Government 101, Government 104, Government 203, and Government 300; (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.

Juniors and seniors majoring in the Department who have a grade of B 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, 300, 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 B 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 taking two of the following three courses: Government 101, 104, and 203.

Introductory Courses

FRESHMAN SEMINARS

Government 101 and 104 (described below) will also be given each semester in the form of seminars for freshmen who make application as follows: (1) Entering freshmen should, when registering for their fall semester courses, indicate whether they wish to be in a seminar. (2) Freshmen who have taken the regular Government 101 course during the fall semester may apply to take Government 104 as a spring seminar. (3) Freshmen who have not taken work in government in the fall semester may apply to take Government 101 in the spring semester as a seminar. All freshman seminars in the Department of Government will emphasize writing.

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. Not offered in 1966-67.

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.

MAJOR SEMINARS

300. MAJOR SEMINARS

Either term. Credit four hours. Times to be arranged. Messrs. Berns, Einaudi, Kenworthy, Lewis, Rossiter, Rovine, Rush, and Sindler.

Every major in the department must take at least one Major Seminar during his upperclass years. The topics of the seminars and the names of the professors offering them each semester will be announced prior to the registration period. Majors should, when registering with their advisers, indicate their preferential choices among the seminars being offered.

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. Not offered in 1966-67.

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. Berns.

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 215-216 are recommended preliminary courses. T Th S 10. Mr. Rossiter.

Analysis of the office and powers of the President, with emphasis on his activities as administrator, diplomat, commander, legislator, politician, and head of state. The lives and accomplishments of the important Presidents are studied at length.

317. THE POLITICAL PROCESS: AMERICAN POLITICAL PARTIES

Fall term. Credit three hours. Prerequisite, Government 101. M W F 11. Mr. Sindler.

The nature and operation of American national and state party systems and politics, related to the broad setting of the governmental system and prevailing political values.

320. MINORITY GROUP POLITICS

Spring term. Credit four hours. Prerequisite, Government 101. M W F 11. Mr. Sindler.

The behavior of ethnic, religious, and racial minorities in politics, elections, and interest group activity. Special attention will be given to Negro political life in both the North and the South.

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. Pre-

requisite, Government 101 or consent of instructor. M W F 2. Mr. Altshuler. Not offered in 1966-67.

[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. Altshuler. Not offered in 1966-67.

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. Rush.

An introduction to the Soviet political system.

334. FOREIGN POLICY OF THE USSR

Spring term. Credit four hours. Open to upperclassmen. Prerequisite, Government 333 or Government 372. M W F 12. Mr. Rush.

A survey from the Revolution to the present.

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.

[340. GOVERNMENT AND POLITICS OF LATIN AMERICA]

Spring term. Credit four hours. Prerequisite, Government 104. Mr. Kenworthy. Not offered in 1966-67.

[341. CONSTITUTIONAL GOVERNMENT IN EUROPE]

Fall term. Credit four hours. Open to upperclassmen. Prerequisite, Government 104. T Th 2-3:30. Mr. Einaudi. Not offered in 1966-67.

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 3-4:30. Miss McVey.

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. Lecturers, T Th 10. Discussion sections. Th 2, 3; F 2, 3. Mr. Einaudi.

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 215, 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.

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.

International Relations

372. INTERNATIONAL RELATIONS

Spring term. Credit three hours. Open to sophomores and upperclassmen. M W F 9. 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 overall frame of reference will consist chiefly of theories, practices, and institutions developed since World War II.

[377. THE UNITED STATES AND ASIA]

Fall term. Credit three hours. No prerequisites. Open to sophomores and upperclassmen. M W F 2. Mr. Kahin. Not offered in 1966-67.

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. Not offered in 1966-67.

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

498. READINGS

Either term. Credit two hours. Any member of the department.

499. READINGS

Either term. Credit four hours. 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. Mr. Sindler.

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. Berns.

[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 1966-67.

[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. Not offered in 1966-67.

527. SEMINAR IN AMERICAN POLITICAL THOUGHT

Fall term. Credit four hours. Open to graduate students and qualified seniors. Hours to be arranged. Mr. Rossiter.

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. Rush.

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. Dotson.

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. Dotson.

542. SEMINAR IN COMPARATIVE GOVERNMENT

Spring term. Credit four hours. Open to graduate students and to qualified seniors. Hours to be arranged. Mr. Einaudi.

[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. Not offered in 1966-67.

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. Not offered in 1966-67.

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 1966-67.

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. Miss McVey.

[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. Not offered in 1966-67.

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. Miss McVey.

HISTORY

Mr. F. G. Marcham, Chairman; Messrs. K. Biggerstaff, D. B. Davis, E. W. Fox, P. W. Gates, R. Graham, H. Guerlac, J. John, D. Kagan, M. Kammen, J. Kirkland, H. Koenigsberger, W. F. LaFeber, W. M. Pintner, R. Polenber, B. Tierney, J. Smith, M. Walker, 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 C 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 C 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. 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 consult with Mr. Kammen and enroll in the Honors Program. They will take the Honors Proseminar (History 399) during the fall semester of their junior year and during the succeeding three terms they will attend other seminar and discussion groups, will consult with individual members of the faculty, and will write a substantial essay. The minimum requirements for admission to candidacy for Honors include (a) a cumulative average of B— in all academic courses; (b) a cumulative average of B in courses in the humanities and social sciences; (c) enroll-

ment 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 B or better in all history and related courses; (b) completion of an Honors essay; (c) passing the appropriate examination toward the end of the senior year.

A departmental committee, of which Mr. Kammen is chairman, will supervise the Honors Program during 1966-67. Applicants for candidacy in 1966-67 should see the chairman of the Honors Committee prior to preregistration in the spring term of 1966. 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. First term prerequisite to second except by permission. M W F 9. Mr. Walker 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. Especially for freshmen. First term prerequisite to second except by permission. T Th S 9. Messrs. Kammen, LeFeber, Polenberg, and staff.

The course will consider three major topics each term and will make use of different modes of historical inquiry: political, constitutional, diplomatic, economic, social and intellectual. A primary purpose will be to give the student opportunities to make his own historical judgments and analyze those made by others. These aims will be pursued largely through weekly seminar work and frequent short essays.

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. Yavetz.

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. John.

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, using a topical approach. Important problems of political, cultural, social and economic history will be studied in some detail using primary sources and specialized secondary works. Written work and discussion sections will be an important part of the course.

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 B— 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 B— or better in virtually all courses in the humanities and social sciences.

429. THE TRANSITION FROM REPUBLIC TO PRINCIPATE IN ROME — I

Fall term. Credit four hours. Prerequisite, consent of the instructor. M W 3-4:30. Mr. Yavetz.

The economic, social, political and legal aspects of the late Republic. The latter part of the course will be devoted to modern historiography on Caesar's personality.

430. THE TRANSITION FROM REPUBLIC TO PRINCIPATE IN ROME — II

Spring term. Credit four hours. Prerequisite, History 429 or consent of the instructor. M W 3-4:30. Mr. Yavetz.

The Principate of Augustus and its aftermath.

[431. THE ROMAN REPUBLIC, 133-30 B.C.]

Fall term. Credit four hours. Prerequisite, History 302 or consent of the instructor. M W 3-4:30. Mr. Kagan. Not offered in 1966-67.

[432. GREEK HISTORY, 500-336 B.C.]

Spring term. Credit four hours. Prerequisite, History 301 or consent of the instructor. M W 3-4:30. Mr. Kagan. Not offered in 1966-67.

[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 3-4:30. Mr. Kagan. Not offered in 1966-67.

[434. HELLENISTIC AGE]

Spring term. Credit four hours. Prerequisite, History 301-302 or consent of the instructor. M W 3-4:30. Mr. Kagan. Not offered in 1966-67.

[335. MEDIEVAL CULTURE, 400-1150]

Spring term. Credit four hours. Prerequisite, History 303-304 or consent of the instructor. T Th 3-4:30. Mr. John. Not offered in 1966-67.

[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 1966-67.

[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. Not offered in 1966-67.

[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. Not offered in 1966-67.

311-342. EUROPE IN THE AGE OF THE RENAISSANCE, REFORMATION AND COUNTER-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. Koenigsberger.

[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 1966-67.

442. THE SPANISH MONARCHY AND THE REVOLT OF THE NETHERLANDS

Spring term. Credit four hours. Prerequisite, six hours of European history and consent of the instructor. T Th S 9. Mr. Koenigsberger.

[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. Not offered in 1966-67.

[445. SOURCES OF EIGHTEENTH-CENTURY FRENCH HISTORY]

Fall term. Credit four hours. Prerequisite, a reading knowledge of French and permission of the instructor. Th 2-4:30. Mr. Guerlac. Not offered in 1966-67.

[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 1966-67.

[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 1966-67.

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.

The growth of administrative, legislative, and judicial institutions in England, particularly as they reflect changes in the range and purpose of English government. The relationship between England, the colonies, and the communities of the Commonwealth will also be considered.

[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. Not offered in 1966-67.

[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 1966-67.

351. EUROPE IN THE NINETEENTH CENTURY

Fall term. Credit four hours. Prerequisite, History 106 or consent of the instructor. W F 3-4:30. Mr. Fox.

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. W F 3-4:30. Mr. Fox.

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. T Th 3-4:30. Mr. Fox.

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. T Th 2-3:30. Mr. Fox.

[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 1966-67.

[356. HISTORY OF MODERN GERMANY]

Spring term. Credit four hours. Prerequisite, six hours in European history. T Th S 10. Not offered in 1966-67.

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

Fall term. Credit four hours. Prerequisite, History 311-312 or consent of the instructor. T Th S 9. Mr. McGuire.

Reading and discussion of scientific classics important for understanding the Scientific Revolution of the seventeenth century from Galileo to Newton.

467. INTELLECTUAL CURRENTS OF THE SEVENTEENTH CENTURY

Spring term. Credit four hours. Prerequisite, History 311-312 or consent of the instructor. Th 2-4:30. Mr. Guerlac.

A survey of the main currents of seventeenth-century intellectual history from Bacon and Descartes through the time of Newton.

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.

[371. COLONIZATION FROM ANTIQUITY UNTIL THE EIGHTEENTH CENTURY]

Fall term. Credit four hours. M W F 9. Mr. Kammen. Not offered in 1966-67.

An examination of why and how societies at certain points in time developed colonies overseas. Particular attention will be given to the relationship between social structure and the sources of colonization; theories of colonization; relations between colonizers and native peoples; colonization and entrepreneurship, economic nationalism and the transfer of cultural institutions. After considering colonization in the ancient Mediterranean world, the Orient, and northern Europe in the Middle Ages, more than half of the course will be devoted to the great age of European colonization in the fifteenth, sixteenth, and seventeenth centuries.

372. THE COLONIAL PERIOD OF AMERICAN HISTORY, 1607-1763

Spring term. Credit four hours. M W F 9. Mr. Kammen.

The colonial origins of American nationalism, with emphasis on the emergence of distinctive institutions, attitudes and social patterns.

472. UNDERGRADUATE SEMINAR IN EARLY AMERICAN HISTORY

Spring term. Credit four hours. Permission of the instructor is required. Hours to be arranged. Mr. Kammen.

Topic for 1967: Colonial New York under the Dutch and the English.

473-474. AMERICAN HISTORY, 1763-1820

Throughout the year. Credit four hours a term. M W F 2. Mr. Smith.

[475. AMERICAN HISTORY FROM 1877 TO 1912]

Fall term. Credit four hours. No prerequisite, but History 216 and Government 101 are strongly recommended as preliminaries. T Th S 9. Mr. LaFeber. Not offered in 1966-67.

[376-377-378. AMERICAN CULTURAL AND INTELLECTUAL HISTORY]

Credit four hours a term. History 376 covers the period to 1820; History 377 covers the period 1820-1890; History 378 covers the period 1890 to the present. The three terms form a sequence but each may be taken independently and without prerequisite. M W F 10. Mr. Davis. Not offered in 1966-67.

[478. THE AMERICAN REFORM IMPULSE, 1800-1860]

Spring term. Credit four hours. Open to upperclassmen and graduate students. M W F 3. Mr. Davis. Not offered in 1966-67.

SEMINAR IN AMERICAN STUDIES

Fall term, Mr. Davis. Spring term, Mr. Elias. (See American Studies 401-402).

379-380. RECENT AMERICAN HISTORY, 1890 TO THE PRESENT

Throughout the year. Credit four hours a term. T Th S 12. Mr. Polenberg.

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 1901. A term paper is optional for all students who receive a C or above on the six weeks' examination.

486. MOTIVATIONS OF AMERICAN FOREIGN POLICY

Spring term. Credit four hours. Prerequisite, consent of the instructor. Th 2-4:30. Mr. LaFeber.

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 1910-20 and the working out of its political, social, economic, and intellectual implications up to the present time. Special attention will be given 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 and shorter essays.

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 and shorter essays.

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 three hours. Open only to juniors who have been accepted by the Department as candidates for Honors in history. W 2-4:30. Mr. Kammen.

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

Throughout the year. Credit four hours a term. Prerequisite, History 399.

Devoted to attendance at seminars, to consultation with individual faculty members and to the writing of a substantial essay.

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. Mr. John.

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.

[508. POLITICS AND THE SOCIETY IN COLONIAL AMERICA]

Spring term. Credit four hours. Open to undergraduates with the permission of the instructor. Hours to be arranged. Mr. Kammen. Not offered in 1966-67.

A topical seminar with emphasis upon the process of political socialization, factionalism, the development of party, and protest movements in relationship to social structure.

511-512. SUPERVISED READING

Throughout the year. Credit four hours a term. Hours to be arranged. For graduate students only. Staff.

591-592. MODERNIZATION OF CHINA

Throughout the year. Credit four hours a term. Prerequisite, History 324 with a grade of B or better or permission of the instructor; 591 prerequisite to 592. 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.

631-632. SEMINAR IN ANCIENT HISTORY

One or two terms. Credit four hours a term. Hours to be arranged. Mr. Yavetz.

[637-638. SEMINAR IN MEDIEVAL HISTORY]

One or two terms. Credit four hours a term. Hours to be arranged. Mr. Tierney. Not offered in 1966-67.

639-640. SEMINAR IN LATIN PALEOGRAPHY.

Throughout the year. Credit four hours a term. First term prerequisite to the second. Hours to be arranged. Mr. John.

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. Koenigsberger.

647-648. SEMINAR IN TUDOR AND STUART HISTORY

One or two terms. Credit four hours a term. 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.

657-658. SEMINAR IN MODERN GERMAN HISTORY

One or two terms. Credit four hours a term. Hours to be arranged. Mr. Walker.

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. Smith.

[675-676. SEMINAR IN AMERICAN CULTURAL AND INTELLECTUAL HISTORY]

One or two terms. Credit four hours a term. Hours to be arranged. Mr. Davis. Not offered in 1966-67.

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.

683-684. SEMINAR IN THE HISTORY OF AMERICAN FOREIGN RELATIONS

Throughout year. Credit four hours a term. Hours to be arranged. Mr. LaFeber.

685-686. SEMINAR IN RECENT AMERICAN HISTORY

One or two terms. Credit four hours a term. Hours to be arranged. Mr. Polenberg.

[687-688. SEMINAR IN LATIN AMERICAN HISTORY]

One or two terms. Credit four hours a term. Hours to be arranged. Mr. Graham. Not offered in 1966-67.

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. M. W. Young, Chairman; Mrs. LeGrace Benson, Messrs. R. G. Calkins, A. B. Griswold, W. I. Homer, W. C. Lipke, S. J. O'Connor, A. S. Roe, J. H. Turnure, F. O. Waage.

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 C 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 level or above and a minimum of two additional courses at a comparable level, which may be further departmental offerings, or in some related area approved by the student's major adviser.

A student who wishes to become a candidate for the degree of Bachelor of Arts with Honors in the history of art may indicate his intention at any time during his junior year to his major adviser. In order to be eligible for the Honors program, the student must have a cumulative average of at least B— and of B for courses in the Department of the History of Art. In his senior year he will include among the regular requirements the course 493-494, involving the preparation of a senior thesis under faculty supervision.

The Distribution I requirement in Expressive Arts is satisfied in the history of art by courses 103-104, 201-202, or by a combination of 103 with any course at the 200 or 300 level.

Introductory Courses

103. INTRODUCTION TO THE ANALYSIS OF WORKS OF ART

Given both terms. Credit three hours. Fall term, M W F 9, 10, 11, 12; T Th S 9, 10, 11. Spring term, M W F 10; T Th S 10. Mr. Young, Mrs. Benson, Messrs. Calkins, Lipke, O'Connor.

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 ART THEORY AND CRITICISM

Spring term. Prerequisite, History of Art 103. Credit three hours. M W F 9, 11; T Th S 11. Mrs. Benson.

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 ap-

proaches 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. M W F 12; T Th S 11. Fall term, Mr. Turnure; Spring term, Mr. Roe.

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. In the spring preference will be given to those who have taken 201, but others will be admitted if places are available.

[205-206. INTRODUCTION TO THE HISTORY OF ARCHITECTURE]

Throughout the year. Credit three hours a term. T Th S 9. Not offered in 1966-67.

ARCHITECTURE OF THE LATER MIDDLE AGES

Fall term. Credit three hours. T Th S 9. Mr. Calkins. (See Architecture 433, College of Architecture.)

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 focused on selected masterpieces of painting, sculpture, and architecture in order to exemplify the main stylistic and cultural trends of the most important periods. Open to freshmen and sophomores; also to upperclass students as an elective.

Intermediate and Advanced Courses

Courses at the 300 level are open to sophomores who have had any one-term introductory course; they are open to upperclassmen without prerequisite. Courses at the 400 level are intended for upperclassmen and graduate students (enrollment in these is limited and consent of the instructor is required).

313. PREHISTORIC ART

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

The evolution and diffusion of Stone Age art and artifacts in Eurasia and Africa will be presented so as to acquaint the student at the same time with the major aspects and problems of archaeological activity in general. The time span extends from the Lower Palaeolithic period to the Metals Age civilizations of the Near East.

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]

Fall term. Credit four hours. M W F 10. Mr. Waage. Not offered in 1966-67.

322. ART OF THE ROMAN EMPIRE

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

The visual arts in the service of the first world state. The course starts with the Etruscan and Republican periods and ends with the conflict of styles in the Early Christian period.

331. ART OF THE MIDDLE AGES

Spring term. Credit four hours. M W F 9. Mr. Calkins.

An investigation of the arts in Europe from the beginning of Christianity to about 1400.

[342. THE ART OF THE NORTHERN RENAISSANCE]

Spring term. Credit four hours. T Th S 10. Mr. Turnure. Not offered in 1966-67.

[343. FLORENTINE AND CENTRAL ITALIAN PAINTING]

Fall term. Credit four hours. T Th S 11. Not offered in 1966-67.

[345. VENETIAN AND NORTH ITALIAN PAINTING]

Fall term. Credit four hours. T Th S 11. Not offered in 1966-67.

[347. ITALIAN RENAISSANCE ARCHITECTURE]

Spring term. Credit four hours. M W F 12. Not offered in 1966-67.

[348. HIGH RENAISSANCE AND MANNERISM]

Fall term. Credit four hours. M W F 10. Not offered in 1966-67.

349. ART OF THE EARLY AND HIGH RENAISSANCE

Fall term. Credit four hours. M W F 9. Mr. Roe.

Painting, sculpture, and architecture in Italy and Northern Europe in the fifteenth and sixteenth centuries.

354. SEVENTEENTH-CENTURY PAINTING

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

A study of the major European schools and masters of the century of the Baroque.

[356. ART OF THE SEVENTEENTH AND EIGHTEENTH CENTURIES]

Spring term. Credit four hours. M W F 9. Mr. Roe. Not offered in 1966-67.

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. Roc. Not offered in 1966-67.

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 lectures will cover major artists (e.g., Eakins, Sullivan, Wright, Marin, Calder, Pollock) and movements (e.g., Naturalism, Impressionism, Social Realism, the International Style, Abstract-Expressionism, Pop Art) and will consider the role of the artist in American culture. The material will be treated in relation to main currents in American thought and with regard to the interplay between national traditions and European influences. Periodically, opportunities will be made available for discussion and study of original works in the White Art Museum.

383. THE 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. Not offered in 1966-67.

386. THE ARTS OF INDIA AND SOUTHEAST ASIA

Spring term. Credit four hours. M W F 11. Mr. O'Connor.

A survey of painting, sculpture, and architecture in India and Southeast Asia from the earliest times to the present with some consideration for the early periods of art in Iran and Central Asia. Both the physical and meta-physical aspects of the arts will be studied, with particular attention to the development of Buddhism and Hinduism and their influence in formulating the aesthetic expression in these countries.

394. ORIGINAL WORKS OF ART

Spring term. Credit four hours. For majors and other advanced students. Prerequisites, any four courses in the Department of the History of Art and 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. MODERN SCULPTURE AND ITS BACKGROUND

Spring term. Credit four hours. T Th S 11. Mr. Lipke.

An investigation of the transformations in media, style, and subject matter of sculpture from the seventeenth through the twentieth century. Emphasis

will be placed upon the major trends in sculpture from Rodin to the present day.

[425. EGYPTIAN ART AND ARCHAEOLOGY]

Fall term. Credit four hours. Prerequisite, consent of the instructor. F 2-4:30. Mr. Turnure. Not offered in 1966-67.

[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 1966-67.

GOTHIC ARCHITECTURE

Spring term. Prerequisite, consent of the instructor. Hours to be arranged. Mr. Calkins. (See Architecture 474, College of Architecture.)

[446. LITERARY SOURCES IN THE ITALIAN RENAISSANCE]

Spring term. Credit four hours. Prerequisite, consent of the instructor. M 2-4:30. Not offered in 1966-67.

448. PROBLEMS IN SIXTEENTH-CENTURY ART

Spring term. Credit four hours. Prerequisite, consent of the instructor. Th 2-4:30. Mr. Roe.

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. Not offered in 1966-67.

461. PROBLEMS IN THE ORIGINS OF MODERN ART

Fall term. Credit four hours. Prerequisites, History of Art 362 or 363 and consent of the instructor. Th 2-4:30. Mr. Lipke.

Topic, fall term, 1966-67: Sources of Surrealism. The seminar will deal with British, French, and Northern European artists whose works can be viewed as prototypes for the Surrealist point of view. Conducted as a seminar; discussion, lectures, reports.

463. PROBLEMS IN TWENTIETH-CENTURY ART

Fall term. Credit four hours. Prerequisite, History of Art 363 or 376. Before registering for the course, consent of the instructor must be obtained. Open to students who have had 464. W 2-4:30. Mr. Homer.

Topic, Fall term 1966-1967: *Avant-garde* painting in America, from the Ash-Can School to Abstract-Expressionism. Conducted as a seminar; discussion, lectures, reports, museum study.

464. PROBLEMS IN TWENTIETH-CENTURY ART

Spring term. Credit four hours. Prerequisite, History of Art 362 or 363. Before registering for the course, consent of the instructor must be obtained. Open to students who have had 463. T 2-4:30. Mr. Homer.

Topic, Spring term 1967: Aesthetics of Color and Expression, from Gauguin to Optical Painting. Conducted as a seminar; discussion, lectures, reports, museum study.

[472. PROBLEMS IN AMERICAN ART]

Spring term. Credit four hours. Prerequisites, History of Art 375 and consent of the instructor. W 2-4:30. Not offered in 1966-67.

[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 1966-67.

[484. PROBLEMS IN CHINESE 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 1966-67.

[486. CHINESE PAINTING: THE LATER CENTURIES]

Spring term. Credit four hours. Prerequisite, consent of the instructor. T 2-4:30. Mr. Young. Not offered in 1966-67.

[488. SOUTHEAST ASIAN ART AND ARCHAEOLOGY]

Spring term. Credit four hours. Prerequisite, consent of the instructor. F 2-4:30. Mr. O'Connor. Not offered in 1966-67.

[495. PROBLEMS IN ENGLISH ART]

Spring term. Credit four hours. Prerequisite, consent of the instructor. M 2-4:30. Mr. Roe. Not offered in 1966-67.

Archaeology

Students who are interested in archaeology are directed 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.

421. NUMISMATICS

Fall term. Credit four hours. Prerequisite, consent of the instructor. T 2-4:30. Mr. Waage.

Students will work with Greek and Roman coins from the University's collection to acquire a knowledge of their archaeological, artistic, and historical importance.

[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 1967-68 and alternate years.

Honors

493. HONORS WORK

Fall term. Credit four hours. Hours to be arranged.

Intended for seniors who have been admitted as candidates for honors. Basic methods of art historical research will be discussed and individual readings and reports assigned leading to the selection of an appropriate thesis topic.

494. HONORS WORK

Spring term. Credit four hours. Prerequisite, History of Art 493.

The individual student, under faculty direction, will prepare a senior thesis.

Graduate Study

Graduate students in their first year will be assigned to such courses in the 300 and 400 groups as will best serve to round out their previous experience in the History of Art. In each course additional individual work will be expected. Such students will also be assigned as appropriate in the individual case to one or more post-graduate reading courses during the year. More advanced graduate students will pursue independent study under faculty direction.

591-592. SUPERVISED READING

Throughout the year. Credit four hours a term.

MATHEMATICS

Mr. A. Rosenberg, Chairman; Messrs. R. P. Agnew, J. B. Ax, M. Balch, J. M. Beck, I. Bernstein, 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, S. Grosser, D. W. Henderson, C. S. Herz, P. J. Hilton, P. J. Kahn, H. Kesten, J. Kiefer, S. Kochen, S. A. Levin, G. R. Livesay, A. Nerode, P. Olum, L. E. Payne, G. S. Rinchart, O. S. Rothaus, G. E. Sacks, D. P. Sather, S. H. Schanuel, A. Schatz, L. Silver, F. Spitzer, R. J. Walker, H. C. Wang, R. W. West, H. Widom, 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; Computer Science 421, 422 may be included in these twelve hours.

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) Computer Science 301, (d) an approved 8-hour sequence in statistics, numerical analysis (in the Department of Computer Science), or advanced differential equations, (e) at least 8 additional hours of courses numbered 300 or above in mathematics, computer science 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. 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.

In all 600-level courses, as well as in Courses 502 and 552, the final grades will be only S or U.

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. McLaughlin.

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.

Presentation by students of material in mathematical literature. Required of all graduate students majoring in mathematics.

Calculus

111. CALCULUS

Either term. Credit three hours. Prerequisite, three years of high school mathematics, including trigonometry. 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. 24, Nov. 21, Jan. 9. Fall term, Messrs. Earle and Rinehart.

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 intensive 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. 13, Apr. 17, May 15. Spring term, Mr. Grosser.

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. 24, Nov. 21, Jan. 9. Fall term, Mr. Greenblatt.

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 exceptional performance 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 and includes more theoretical material.

221. CALCULUS

Either term. Credit four hours. Prerequisite, grade of B 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.

191. CALCULUS FOR ENGINEERS

Either term. Credit four hours. Prerequisite, three years of high school mathematics, including trigonometry. 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. 19, Nov. 9, Dec. 7, Jan. 11. Fall term, Messrs. Livesay and Spitzer.

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. 1, Mar. 22, Apr. 19, May 17. Spring term, Messrs. Agnew and Payne.

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 9, 11. Preliminary examinations will be held at 7 p.m. on Oct. 18, Nov. 29, Jan. 10. Fall term, Mr. Balch.

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. 14, Apr. 18, May 16. Spring term, Mr. 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. Nerode.

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 and Differential Equations

313. TOPICS IN ALGEBRA AND ANALYSIS FOR ENGINEERS

Fall term. Credit four hours. Prerequisite, 213. M W F 9.

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.

This is intended as a course for students who have had only three semesters of calculus. It does not prepare for 415-416, and will not meet the needs of those graduate students whose work requires really serious application of mathematical methods.

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 honors section of 294 or consent of the instructor. (Students from regular sections of 294 will be admitted upon the 294 instructor's recommendation, provided their grade is very high and they make up the extra work.) M W F 12, Th 2. Mr. Widom.

Graduate students who need mathematics extensively in their work and who have had a solid advanced calculus course as undergraduates should take 415-416. If they have not had such an advanced calculus course they should take 421-422-423. If their preparation is still too weak for this, they should take all or part of 221-222, followed by 421-422-423.

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. Widom.

Continuation of complex variables. Conformal mappings. Harmonic functions. Some special functions. Laplace and Fourier transforms. Asymptotic expansions of functions.

423. APPLIED ANALYSIS

Fall term. Credit four hours. Prerequisite, 422. M W F 12, Th 2. Mr. Schatz.

Linear operators and integral equations. Calculus of variations. Application to eigenvalue problems. Green's function, and treatment of special problems of mathematical physics.

415-416. MATHEMATICAL METHODS IN PHYSICS

Throughout the year. Credit four hours a term.

Intended for graduate students in physics or related fields who have had a strong advanced calculus course and at least two years of general physics. The course goes very quickly, covering in two semesters slightly more than 421-422-423. Undergraduates will be admitted only with consent of the instructor. First term prerequisite to second. T W Th F 12. Mr. Fuchs.

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, 315 or consent of instructor. First term prerequisite to second. M W F 12. Mr. Payne.

Basic theory of ordinary differential equations, treatment of Laplace,

heat, and wave equations with introduction of eigenfunction methods and generalized functions. Topics include transform methods, approximation methods, and special functions. Applications to a variety of physical problems.

517-518. ORDINARY DIFFERENTIAL EQUATIONS

Throughout the year. Credit four hours a term. Prerequisites, 411-412 and concurrent registration in 413. First term prerequisite to second. T Th S 10. Mr. Balch.

Existence and uniqueness. Autonomous systems, with specialization to geometric theory in two dimensions. Linear equations. Stability. Bifurcation theory. Some special functions of mathematical physics, from the viewpoint of equations in the complex domain and the two point boundary value problem.

519-520. PARTIAL DIFFERENTIAL EQUATIONS

Throughout the year. Credit four hours a term. Prerequisite, concurrent registration in 413 or, with consent of instructor, 423 or 416. First term prerequisite to second. M W F 10. Mr. Levin.

Classification of partial differential equations. Questions of existence, uniqueness and continuity of the solutions of typical boundary value problems. The equations of Laplace and Poisson, principle of the maximum and the mean; the wave equation, heat equation.

521-522. MATHEMATICAL FOUNDATIONS OF QUANTUM MECHANICS

Throughout the year. Credit four hours a term. Prerequisite, 415-416 or equivalent and Physics 572 or consent of instructor. First term prerequisite to second. T Th S 9. Fall term, Mr. Chaiken. Spring term, Mr. Faris.

Hilbert space theory. Schrödinger equation, scattering theory, relativistic field equations, problems in field theory.

627-628. SEMINAR IN PARTIAL DIFFERENTIAL EQUATIONS

Throughout the year. Credit four hours. Prerequisite, consent of the instructor. Hours to be arranged. Fall term, Mr. Sather. Spring term, Mr. Schatz.

For courses in Numerical Analysis see Computer Science 325, 421, 422.

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.) Mr. Chaiken.

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. Rothaus.

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.

514. COMPLEX VARIABLE THEORY

Spring term. Credit four hours. Prerequisites, 412 and 413, or consent of the instructor. M W F 9. Mr. Rothaus.

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. Herz.

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.

611-612. SEMINAR IN ANALYSIS

Throughout the year. Credit four hours. Prerequisite, consent of the instructor. Hours to be arranged. Fall term, Mr. Widom. Spring term, Mr. Rothaus.

613. FUNCTIONAL ANALYSIS

Fall term. Credit four hours. Prerequisites, 432 and 512. Mr. Gross.

Topological vector spaces, Banach and Hilbert spaces, Banach algebras, the spectral theorem. If time permits, topological groups.

621. MEROMORPHIC FUNCTIONS

Fall term. Credit four hours. Prerequisite, consent of the instructor. Hours to be arranged. Mr. Fuchs.

Subharmonic functions. The distribution of values of a meromorphic function. Nevanlinna's first and second Fundamental Theorem. Growth properties of meromorphic functions. Nevanlinna deficiencies and their relations with other properties of meromorphic functions.

622. RIEMANN SURFACES

Spring term Credit four hours. Prerequisites, 514, 531, 551. Hours to be arranged. Mr. Earle.

Definition and topological properties. Harmonic functions and differentials. Uniformization theorem. Compact surfaces, algebraic functions, and the Riemann-Roch theorem. Moduli of compact surfaces.

[515. POTENTIAL THEORY]

Fall term. Credit four hours. Prerequisites, 500 and 512. Not offered in 1966-67.

[523-524. ANALYSIS ON MANIFOLDS]

Throughout the year. Credit four hours a term. Prerequisite, 512. Not offered in 1966-67.

[528. VARIATIONAL METHODS]

Spring term. Credit four hours. Prerequisites, 423, 416 or 519. Not offered in 1966-67.

[614. INTEGRAL EQUATIONS]

Fall term. Credit four hours. Prerequisite, 413. Not offered in 1966-67.

[615-616. FOURIER ANALYSIS]

Throughout the year. Credit four hours a term. Prerequisites, 500, 512 and some notions of complex variables. Not to be offered in 1966-67.

[617. ANALYTIC NUMBER THEORY]

One term. Credit four hours. Prerequisite, 514. Not offered in 1966-67.

[623. SEVERAL COMPLEX VARIABLES]

Spring term. Credit four hours. Prerequisite, 514. Not offered in 1966-67.

[625. ERGODIC THEORY]

Fall term. Credit four hours. Prerequisite, 512. Not offered in 1966-67.

[627. CALCULUS OF VARIATIONS]

One term. Credit four hours. Prerequisites, 500 and 551. Not offered in 1966-67.

Algebra

331. LINEAR ALGEBRA

Either term. Credit four hours. Prerequisites, 200 (this may be waived with consent of instructor) and 213. *A student may not receive credit in both 221 and 331.* M W F 10. Fall term, Mr. Nerode.

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.

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. Schanuel.

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. Ax.

Finite groups, rings and fields, tensor algebra, Galois theory.

549-550. LIE GROUPS

Throughout the year. Credit four hours a term. Prerequisites, 500 and 531. Hours to be arranged. Mr. Grosser.

Lie algebras; the theorems of Lie, Engel, Cartan, Levi. Differential equations. Analytic manifolds. Analytic groups and Lie theory. Simply connected and compact analytic groups. Cartan subalgebras. (Maximal) compact subgroups of Lie groups. Complex analytic groups.

631-632. SEMINAR IN ALGEBRA

Throughout the year. Credit four hours a term. Prerequisite, consent of the instructor. Hours to be arranged. Fall term, Mr. Rinehart. Spring term, Mr. Ax.

633. GROUP THEORY

Spring term. Credit four hours. Prerequisite, 531. Hours to be arranged. Mr. Gruenberg.

Elementary facts on the cohomology of groups; presentation theory; cohomological dimension; extension theory; splitting theorems; fixed point free automorphisms; stability groups.

637. ALGEBRAIC NUMBER THEORY

Spring term. Credit four hours. Prerequisite, 531. Hours to be arranged. Mr. Schanuel.

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. Silver.

Categories, functors, derived functors. Applications.

[635. THEORY OF RINGS]

Fall term. Credit four hours. Prerequisite, 531. Not offered in 1966-67.

[639. LIE ALGEBRAS]

Fall term. Credit four hours. Prerequisite, 531. Not offered in 1966-67.

Geometry and Topology

352. ELEMENTARY TOPOLOGY

Spring term. Credit four hours. Prerequisite, 221 or 331. T Th S 9. Mr. Kahn.

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, 221 or 331 or 431, which may be taken concurrently. First term prerequisite to second. T Th S 9. Mr. Thomas.

Axiomatic methods in geometry. Foundations of Euclidean geometry. Non-euclidean geometry, projective geometry, other geometric theories.

454. INTRODUCTION TO DIFFERENTIAL GEOMETRY

Spring term. Credit four hours. Prerequisite, 222. M W F 9. Mr. Wang.

An introduction to differential forms and their application to the study of curves, surfaces and higher dimensional manifolds.

500. FOUNDATIONS OF MATHEMATICS

Fall term. Credit four hours. Prerequisite, 412. M W F 3. Mr. Henderson.

Topics in general topology, including set theory, topological spaces, mappings, product spaces, metrization theorems, topological groups, etc.

551-552. AN INTRODUCTION TO ALGEBRAIC TOPOLOGY

Throughout the year. Credit four hours a term. Prerequisites, 432 and 500. M W F 2. Mr. Greenblatt.

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 a term. Prerequisite, consent of the instructor. Hours to be arranged. Fall term, Mr. Wang.

653-654. ADVANCED TOPOLOGY

Throughout the year. Credit four hours a term. Prerequisites, 531 and 552. Hours to be arranged. Fall term, Mr. Kahn. Spring term, Mr. Livesay.

A selection of advanced topics from modern algebraic, differential and geometric topology. The content of this course varies from year to year.

[663. MANIFOLDS]

Fall term. Credit four hours. Prerequisites, 552 and basic notions of general topology and algebra. Not offered in 1966-67.

[655-656. HOMOTOPY THEORY]

Throughout the year. Credit four hours a term. Prerequisite, 552. Not offered in 1966-67.

[667. ALGEBRAIC GEOMETRY]

Spring term. Credit four hours. Prerequisites, 500 and 531. Not offered in 1966-67.

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. 19, Nov. 9, Dec. 7, Jan. 11. Mr. Huber.

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 will take 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. 19, Nov. 9, Dec. 7, Jan. 11. Mr. Spitzer.

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 for those who will continue with 472. (See also the descriptions of 370 and 571.)

472. STATISTICS

Spring term. Credit four hours. Prerequisite, 371 and knowledge of linear algebra such as taught in 221. M W F 12. Preliminary examinations will be held at 7:30 p.m. on Mar. 1, Mar. 22, Apr. 19, May 17.

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. Farrell.

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. Spitzer.

An introduction to Markov chains. Discrete and continuous time parameter chains. Applications to birth and death processes and branching processes.

575. INFORMATION THEORY

Fall term. Credit four hours. Prerequisite, 411, or, with consent of the instructor, 416 or 421. (Familiarity with at least part of the contents of 571 would be helpful.) No prior knowledge of information theory is required for this course, but a modest amount of mathematical maturity is desirable. T Th 2-3:30. Mr. Wolfowitz.

Coding theorems and their converses for the principal noisy channels. Sequential decoding. Two-way codes. Coding with a fidelity criterion. Study of the probability of error. Recent results.

671-672. SEMINAR IN STATISTICS

Throughout the year. Credit four hours. Prerequisite, consent of the instructor. M 4-6. Fall term, Mr. Wolfowitz.

673. ANALYSIS OF VARIANCE

Fall term. Credit four hours. Prerequisite, 572. Hours to be arranged. Mr. Huber.

The classical univariate and multivariate normal procedures. Invariance, minimax and admissibility results. Ranking problems. Other models. Non-parametric methods.

674. DESIGN OF EXPERIMENTS

Spring term. Credit four hours. Prerequisite, 673. Hours to be arranged. Mr. Farrell.

Algebraic and geometric construction of the classical balanced block designs. Optimum design theory. Sequential designs.

677-678. STOCHASTIC PROCESSES

Throughout the year. Credit four hours a term. Prerequisites, 512, 571 or consent of the instructor. First term prerequisite to second. Hours to be arranged. Mr. Kesten.

Definition and basic properties of stochastic processes, martingales, sample path properties of stochastic processes, invariance principles. More detailed investigations of Markov processes and Markov chains, diffusion processes.

[675. STATISTICAL ESTIMATION]

Fall term. Credit four hours. Prerequisite, 572. Hours to be arranged. Not to be given in 1966-67.

[676. DECISION FUNCTIONS]

Spring term. Credit four hours. Prerequisite, 675. Hours to be arranged. Not given in 1966-67.

Mathematical Logic

381. ELEMENTARY MATHEMATICAL LOGIC

Spring term. Credit four hours. Prerequisite, 122 or 200. M W F 11. Mr. Nerode.

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, Spring term. Mr. McLaughlin.

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. Fall term, Mr. Crosley.

683. THEORY OF MODELS

Fall term. Credit four hours. Prerequisite, 481-482. Hours to be arranged. Mr. Crosley.

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 1966-67.

[685. METAMATHEMATICS]

Spring term. Credit four hours. Prerequisite, 482. Not offered in 1966-67.

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. Mattijs Jolles, 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

Mrs. Jean Parrish, 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 (four hours for upperclassmen). Hours to be arranged.

201-202. BURMESE READING

Throughout the year. Credit three hours a term. Prerequisite for 201, Qualifi-

cation 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 (four hours for upperclassmen). Offered according to demand. Hours to be arranged.

Chinese

Messrs. N. C. Bodman, F. C. Chin, D. Hawkes, J. McCoy, 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 (four hours for upperclassmen). 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. Not offered in 1966-67.

221-222. ELEMENTARY CANTONESE CHINESE

Throughout the year. Credit three hours a term. Prerequisite, Qualification in Chinese and consent of the instructor. Hours to be arranged. Mr. McCoy.

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

Either term. Credit four hours. Prerequisite, consent of the instructor. Hours to be arranged. Mr. Bodman.

403. LINGUISTIC STRUCTURE OF CHINESE

Either 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. Not offered in 1966-67.

416. CLASSICAL CHINESE POETRY AND DRAMA

Fall term. Credit four hours. Prerequisite, consent of the instructor. Hours to be arranged. Mr. Hawkes.

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. SEMINAR IN CHINESE LITERATURE

Fall term. Credit and hours to be arranged. Mr. Hawkes.

SINO-TIBETAN LINGUISTICS

(See 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. Hours to be arranged.

301-302. ELEMENTARY READING COURSE

Throughout the year. Credit four hours a term. Prerequisite, satisfaction of language requirement for graduation and consent of the instructor. Hours to be arranged. Mr. Echols.

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.

English as a Second Language

The following 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.

151. ENGLISH AS A SECOND LANGUAGE

Fall term. Open only to graduate students, with written approval of the Graduate School. 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

Messrs. J. Béreaud, G. Brogyanyi, Miss Alice Colby, Messrs. P. de Man, J.-J. Demorest, H. Dieckmann, D. I. Grossvogel, R. A. Hall, Jr., E. P. Morris, Mrs. Jean Parrish, Messrs. B. L. Rideout, A. Seznec, and Staff.

Students who elect to major in French should ordinarily have completed French 201-202 and French 203-204, and they should consult Miss Colby as soon as possible.

A student majoring in French is expected to become conversant with a fair portion of the masterworks of French literature, to acquaint himself with the outlines of French literary history and to develop some skill in literary analysis. To this end he will be expected to complete successfully 28 hours of French literature courses at the 300 level or higher, with papers to be written in French. At least one 400 course

in French literature must be included. One term of French 401, 402, or 403, may be substituted for four hours of the 28 required in French literature (but not for the required 400 course in literature). One four-hour course offered by the Department of Comparative Literature may be counted toward the 28 required hours if prior approval has been obtained from the major adviser.

The major student will also be expected to acquire competence in the handling of French. This competence will be demonstrated by the successful completion of French 304 or by the passing of an oral and written examination to be taken no later than the end of the first semester of the senior year. The level of the exam will be that ordinarily reached at the end of four semesters of language study beyond Qualification. (For definition of Qualification see page 12 of this Announcement.) The particular language courses taken by any student will, of course, be partially determined by his level of preparation at entrance, personal talent, particular opportunities such as Junior Year Abroad, and the like. The placement in language courses of incoming majors will be decided in the case of students who have done no previous language work at Cornell, by an oral and written examination which will be administered in the second term of the sophomore year.

The Honors program in French is open to a few superior students, to be selected on the basis of grades, a letter of application, and interview. Those students will meet weekly, during junior and senior years, in individual tutorial conferences with a faculty member. Junior tutorial will be devoted to intensive study of selected problems or authors and to the choice of a topic for the Honors essay; senior tutorial, to the preparation and writing of that essay. Honors students may be released from one or two courses in senior year to write the Honors essay. They will take a general oral examination at the end of senior year. For details, please consult Mr. Morris.

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 (four hours for upperclassmen). Students who have previously studied French should consult page 12 before registering for this course. 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 9.

102. ELEMENTARY COURSE

Either term. Credit six hours (four hours for upperclassmen). Prerequisite, French 101 or its equivalent. Students who have previously studied French should consult page 12 before registering for this course. Fall term: drill daily at 8, 9, 10, 11, or 12; lectures M W 8 or 11 or T Th 9 or 10. Spring term: drill daily at 8, 10, 11, or 12; lectures 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 F 8, 11, 12, or 2. Spring term: drill M W F 11 or T Th S 10; lectures F 12 or 2.

121. ELEMENTARY READING COURSE

Either term. Credit three hours. Open only to senior non-Arts students with written permission from their colleges. Hours to be arranged.

Designed to help students going on to graduate school to acquire a reading knowledge of the language.

122. ELEMENTARY READING COURSE

Either term. Credit three hours. Open only to senior non-Arts students with written permission from their colleges. Prerequisite, French 121, or its equivalent. Hours to be arranged.

Designed to help students going on to graduate school to acquire a reading knowledge of the language.

151. ELEMENTARY GRADUATE READING COURSE

Either term. Open only to graduate students. Hours to be arranged.

Designed to help students prepare for the graduate Reading Examination administered by the Graduate School.

152. ELEMENTARY GRADUATE READING COURSE

Either term. Open only to graduate students. Prerequisite, French 151 or one year of college French or two years of high school French. Hours to be arranged.

Designed to help students prepare for the Graduate Reading Examination administered by the Graduate School.

201-202. INTRODUCTION TO FRENCH LITERATURE

Primarily intended for freshmen. Course 201 prerequisite to 202. Both courses given each term. Prerequisite, Qualification in French (for definition of Qualification see page 12). The course will presuppose the ability to read literary French with some facility. In the fall term, French 201 will be offered M W F 9, 10, 11, 12, or 2, or T Th S 9 or 11; French 202 M W F 12 or T Th S 10 or 12. In the spring term, French 201 will be offered M W F 12 or T Th S 9 or 12; French 202 M W F 9, 10, 11, 12, or 2, or T Th S 9, 10, or 11. Mrs. Parrish, Messrs. Béreaud, Brogyanyi, Demorest, Morris, 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 skill 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 12). Fall term: sections M W F 8, 11, 12, 2, 3, or T Th S 8, 9, 11, or 12; lectures M W 8, 11, 12, 2, or T Th 8, 12, or 2. Spring term: sections M W F 11, 2, or T Th S 8 or 12; lectures M W 8, 12, or T Th 11 or 2.

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: sections

M W F 11, 2, or T Th S 11; lecture T Th 12. Spring term: sections M W F 8, 12, or T Th S 10 or 11; lectures M W 11, 2, or T Th 8 or 12.

Continuation of the work of French 203, with special attention to accurate and idiomatic expression in 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.

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. M W F 11, Mr. Béreaud; M W F 12, Mrs. Gordon.

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. M W F 12, Mrs. Gordon; T Th S 11, Mr. Béreaud.

Continuation of the work in French 303.

321. SIXTEENTH-CENTURY POETRY

Fall term. Credit four hours. Prerequisite, French 201-202 or consent of the instructor. T Th S 11. Mr. Morris.

An introduction to major texts, personalities and verse-forms of sixteenth-century poetry, in the setting of Renaissance social and intellectual history. Focal points will be: Marot (and the late medieval French tradition); Scève (Platonism: the lesson of Petrarch and his followers); Du Bellay and Ronsard (Greek and Latin models: the figure of the poet); D'Aubigné (the Biblical tradition); Sponde and La Ceppède (baroque mysticism, metaphysical poetry). History and inherent "laws" of some poetic genera: epigram, sonnet, Horatian ode, satire, epistle, elegy, epic. Historical topics: court life, Lyons Humanism, the religious wars. Wide readings (at least one complete book for each major author; some Greek, Latin, and Italian poems in translation); close scrutiny of selected texts. Throughout, comparisons with later poets, and speculations on the essence of poetry. Conducted in French.

343. THE NOVEL IN THE EIGHTEENTH CENTURY

Fall term. Credit four hours. Prerequisite, French 201-202 or consent of the instructor. M W F 2. Mrs. Parrish.

Readings in Marivaux, Prévost, Diderot, Rousseau, Laclos, Bernardin de Saint-Pierre. Lectures in French, classroom discussion, written reports.

352. POETRY OF THE ROMANTIC PERIOD

Spring term. Credit four hours. Prerequisite, French 201-202 or consent of the instructor. M W F 10. Mr. Demorest.

Interpretation of significant poems of Lamartine, Hugo, Vigny, Musset, Guérin, and Nerval. Reading in some of the main critical documents of the period. Lectures in French, classroom discussion, written reports.

393. DRAMA: THE MODERN FRENCH STAGE

Fall term. Credit four hours. Prerequisite, French 201-202 or consent of the instructor. M W F 9. Mr. Grossvogel.

Traditional definitions of the theater and experimental departures therefrom as seen through the major plays and dramatic theories of twentieth-century France. Lectures in French, classroom discussion, written reports.

396. THE NOVEL: MODERN FRENCH WRITERS

Spring term. Credit four hours. Prerequisite, French 201-202 or consent of the instructor. M W F 11.

A sampling of the major French novelists from the early Gide to the later Robbe-Grillet in order to attempt a definition of the novel whereby the traditional and experimental forms of French fiction in the twentieth century might be examined. Lectures in French, classroom discussion, written reports.

401-402. HISTORY OF THE FRENCH LANGUAGE

Throughout the year in alternate years. Credit four hours a term. Prerequisites, Qualification in French and Linguistics 201 or 301. M W F 11.

Fall term: detailed study of the structural development of French from the origins to the Old French period. Spring term: selected readings in Old French texts, examination of structural changes from the Old French period to the present.

403. LINGUISTIC STRUCTURE OF FRENCH

Fall term. Credit four hours. Prerequisites, Qualification in French and Linguistics 201 or 301. M W F 3.

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 or who have taken French 501. Fall term: T Th S 9. Spring term: F 2-4 plus one hour to be arranged for those students who are completing the sequence French 501-French 416 without previous training in Old French. 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.

417. POETRY OF THE FIFTEENTH CENTURY

Fall term. Credit four hours. Prerequisite, two terms of 300-level French literature courses or consent of the instructor. F 2-4. Mr. Brogyanyi.

The poetry of François Villon and his contemporaries.

434. NOVELS OF THE SEVENTEENTH CENTURY

Spring term. Credit four hours. Prerequisite, two terms of 300-level French literature courses or consent of the instructor. F 2-4. Mr. Seznec.

Principal novels of the seventeenth century from *l'Astrée* to *la Princesse de Clèves*, including some semi-fictional *mémoires*.

441-442. FRENCH THOUGHT IN THE EIGHTEENTH CENTURY AND ITS ORIGINS

Throughout the year. Credit four hours a term. Prerequisite, French 201-202 or consent of the instructor. W 2-4. Mr. Dieckmann.

The origins: Descartes, Gassendi, Saint-Evremond, Bayle, Fontelle. The fundamental positions: Montesquieu, Voltaire, Diderot, Rousseau.

454. BAUDELAIRE AND MALLARMÉ

Spring term. Credit four hours. Prerequisite, at least one term of a 300-level French literature course. M 2-4. Mr. de Man.

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. Seznec.

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. Béreaud.

A study of the stylistic significance of tenses and of sentence structure. Short daily or weekly papers. Conducted in French.

GRADUATE COURSES

Whereas 400-level courses are designed for upperclassmen and graduate students, the 500 courses in literature are intended solely for graduate students.

522. GRADUATE SEMINAR IN RENAISSANCE LITERATURE

Spring term. Credit four hours. T 4-6. Mr. Morris.

Topic: Du Bellay.

SEMINAR ON THE NOVEL

Spring term. Credit four hours. T 2-4. Mr. Dieckmann.

See Comparative Literature 516.

549. GRADUATE SEMINAR IN EIGHTEENTH-CENTURY LITERATURE

Fall term. Credit four hours. T 4-6. Mr. Dieckmann.

Topic: Diderot.

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.

[555. HISTORICAL PHONOLOGY OF FRENCH]

Fall term in alternate years. Credit four hours. Prerequisite, Linguistics 301 or consent of the instructor. T Th 2. Not offered in 1966-67.

[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. Not offered in 1966-67.

571-572. INTRODUCTION TO LITERARY STUDIES

Throughout the year. Credit two hours a term. Required of all first-year graduate students in Romance Studies. M W 11. Mrs. Parrish and staff.

595. GRADUATE SEMINAR IN TWENTIETH-CENTURY LITERATURE

Fall term. Credit four hours. M 2-4. Mr. Grossvogel.

The novel, existentialism, and existential fiction. The novels of Camus, Sartre, and others to be examined as modes of philosophical thought.

600. SEMINAR IN FRENCH LINGUISTICS

Offered in accordance with student needs. Credit four hours a term. Hours to be arranged. Mr. Hall.

German

Messrs. D. Bansberg, V. T. Bjarnar, E. A. Blackall, D. Connor, J. M. Cowan, Mrs. Marianne Cowan, Messrs. J. B. Dallett, P. de Man, H. Deinert, Mrs. Else Fleissner, Messrs. O. J. M. Jolles, H. L. Kufner, P. Lowe, Jr., J. W. Marchand, H. H. Mietusch, B. E. Pike, J. R. Puryear, 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 C- 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, 405, and at least five other 300- or 400-level courses in German which should be a representative selection of courses in

Germanic Linguistics and/or German Literature. 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 B 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 (136 Morrill Hall).

101. ELEMENTARY COURSE

Either term. Credit six hours (four hours for upperclassmen). Students who have previously studied German should consult page 12 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 (four hours for upperclassmen). Students who have previously studied German should consult page 12 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, 10 or 12; lecture, F 10. Spring term: drill, T Th S 9 or 12; lecture, F 10.

121. ELEMENTARY READING COURSE

Either term. Credit three hours. Open only to senior non-Arts students with written permission from their colleges. Hours to be arranged.

Designed to help students going on to graduate school to acquire a reading knowledge of the language.

122. ELEMENTARY READING COURSE

Either term. Credit three hours. Open only to senior non-Arts students with

written permission from their colleges. Prerequisite, German 121 or its equivalent. Hours to be arranged.

Designed to help students going on to graduate school to acquire a reading knowledge of the language.

151. ELEMENTARY GRADUATE READING COURSE

Either term. Open only to graduate students. Hours to be arranged.

Designed to help graduate students prepare for the Graduate Reading Examination administered by the Graduate School.

152. ELEMENTARY GRADUATE READING COURSE

Either term. Open only to graduate students. Prerequisite, German 151 or one year of college German or two years of high school German. Hours to be arranged.

Designed to help graduate students prepare for Graduate Reading Examination administered by the Graduate School.

FRESHMAN SEMINAR IN GERMAN LITERATURE

(See Comparative Literature 103-104.)

201. MASTERPIECES OF GERMAN LITERATURE

Either term. Credit three hours. Prerequisite, Qualification in German (for definition of Qualification see page 12). 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, Connor, 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 12). 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. T Th S 9.

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. T Th S 12.

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. T Th S 12.

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.

[353. LESSING AND THE ENLIGHTENMENT]

Fall term. Credit four hours. Prerequisite, German 202 or consent of the instructor. M W F 9. Mr. Connor. Not offered in 1966-67.

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. T 11-1. Mrs. Fleissner.

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. Mr. Blackall.

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. M W F 12. Mr. Blackall.

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. Not offered in 1966-67.

[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. Not offered in 1966-67.

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. The Lector.

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. Lowe.

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. Lowe.

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. Kufner.

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. Kufner.

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. Mr. Puryear.

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. Mr. Puryear.

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.

407-408. TOPICS IN EARLIER GERMAN LITERATURE: 1300-1700

Spring term only. Credit four hours. Prerequisite, consent of the instructor. T Th S 11. Mr. Dallett.

Topic: Liebes- und Ehegestaltungen in der nichtdramatischen Literatur Deutschlands von der Mystik zum Barok.

Vier Aspekte des Themas: Liebe und Ehe werden an wichtigen Beispielen der deutschen Lyrik, Verssatire, erzählenden Prosa und Fachprosa aus vier Jahrhunderten verfolgt: die mystische Brautwerbung und Hochzeit; das Leid als Grundelement der geistlichen sowie der weltlichen Liebe; die närrische Liebe; die Ehe als Frage.

409-410. TOPICS IN CLASSICISM AND ROMANTICISM

Fall term only. Credit four hours. Prerequisite, consent of the instructor. Th 11-1. Mr. Blackall.

Topic: Four novels of education: Wilhelm Meisters Lehrjahre, Heinrich von Ofterdingen, Der Nachsommer, Der grüne Heinrich.

413-414. TOPICS IN MODERN GERMAN LITERATURE

Fall term only. Credit four hours. Prerequisite, consent of the instructor. W 2-4. Mrs. Fleissner.

Topic: Naturalismus, Expressionismus, Symbolismus.

415. BIBLIOGRAPHY AND METHODS

Fall term. Credit four hours. Prerequisite, consent of the instructor. F 2-4. Mr. Marchand.

451. HONORS READING COURSE

Fall term. Credit four hours. For Honors students only. Mr. Connor.

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

Whereas 400-level courses are designed for upperclassmen and graduate students, the 500-level courses are intended solely for graduate students.

500. SPRECH- UND SCHREIBÜBUNGEN

Throughout the year. No credit. Hours to be arranged. The Lector.

Required of all graduate students in German studies.

501. INTRODUCTION TO GERMANIC LINGUISTICS

Fall term in alternate years. Credit four hours. W 2-4. Mr. Puryear.

502. GOTHIC

Spring term in alternate years. Credit four hours. W 2-4. Mr. Puryear.

[503. OLD SAXON]

Fall term in alternate years. Credit four hours. M W F 2. Mr. Kufner. Not offered in 1966-67.

[504. OLD HIGH GERMAN]

Spring term in alternate years. Credit four hours. M W F 2. Mr. Marchand. Not offered in 1966-67.

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. Mr. Lowe. Not offered in 1966-67.

[512. EDDA]

Spring term. Credit four hours. Prerequisite, German 510 or consent of the instructor. Hours to be arranged. Mr. Lowe. Not offered in 1966-67.

[521. MIDDLE HIGH GERMAN LITERATURE I]

Fall term. Credit four hours. Prerequisite, German 406 or consent of the instructor. M 2-4. Not offered in 1966-67.

522. MIDDLE HIGH GERMAN LITERATURE II

Spring term. Credit four hours. Prerequisite, German 406 or consent of the instructor. M 2-4. Mr. Marchand. Topic: The Trivium: influence on MHG literature.

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. Not offered in 1966-67.

[526. SIXTEENTH-CENTURY GERMAN LITERATURE]

Spring term. Credit four hours. F 2-4. Mr. Dallett. Not offered in 1966-67.

528. SEVENTEENTH-CENTURY GERMAN LITERATURE

Spring term. Credit four hours. W 2-4. Mr. Dallett.

Topic: Forms of Baroque Fiction. A close study of von Zesen's *Adriatische Rosemund*, Grimmelshausen's *Simplicianische Schriften*, and Ziegler und Kliphausen's *Asiatische Banise*; the adaptation of their novelistic and non-fictional sources; the problem of the incorporation of encyclopaedic learning in fictional structures; numerological and other symbols of articulation, particularly as relating to ideas of terrestrial order and disorder.

[530. EIGHTEENTH-CENTURY LITERATURE OTHER THAN GOETHE]

Spring term. Credit four hours. W 2-4. Not offered in 1966-67.

531. GOETHE

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

Topic: Goethe als Kritiker und Naturwissenschaftler.

533-534. GERMAN ROMANTICISM

Spring term. Credit four hours. Th 2-4. Mr. Blackall.

Topic: The earlier Romantics: Jean Paul, the Schlegels, Tieck, Wackenroder, Novalis.

535-536. NINETEENTH-CENTURY GERMAN LITERATURE

Fall term only. Credit four hours. Th 2-4. Mr. Deinert.

Topic: Nineteenth-Century Drama: Grabbe, Büchner, Hebbel.

537-538. TWENTIETH-CENTURY GERMAN LITERATURE

Credit four hours a term. T 2-4.

Fall term topic: Roman und Novelle des 20 Jahrhunderts. Mrs. Fleissner.

Spring term topic: Social Criticism in Twentieth-Century Drama: Hauptmann and Brecht. Mr. Deinert.

[540. HISTORY AND METHODS OF MODERN GERMAN LITERARY CRITICISM]

Spring term. Credit four hours. T 2-4. Mr. Jolles. Not offered in 1966-67.

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 1966-67.

[602. EARLY NEW HIGH GERMAN]

Spring term. Four hours credit. Hours to be arranged. Not offered in 1966-67.

611. GERMANIC PALEOGRAPHY AND CODICOLOGY

Fall term. Four hours credit. Hours to be arranged. Mr. Marchand.

612. COMPARATIVE GERMANIC CULTURES

Spring term. Four hours credit. Hours to be arranged. Mr. Marchand.

[651. SEMINAR IN GERMANIC LINGUISTICS I]

Fall term. Four hours credit. Th 2. Mr. Marchand. Not offered in 1966-67.

[652. SEMINAR IN GERMANIC LINGUISTICS II]

Spring term. Four hours credit. Th 2. Mr. Marchand. Not offered in 1966-67.

[653-654. SEMINAR IN GERMAN LITERATURE]

Throughout the year. Credit four hours a term. Not offered in 1966-67.

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 (four hours for upperclassmen). 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. Not offered in 1966-67.

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 (four hours for upperclassmen). 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 573-574.) Not offered in 1966-67.

SOUTHEAST ASIAN LITERATURE IN TRANSLATION

(See Literature 318.)

Italian

Messrs. G. P. Biasin, R. A. Hall, Jr., and Staff.

For a major in Italian, consult Mr. Biasin and Mr. Hall.

101-102. ELEMENTARY COURSE

Throughout the year. Credit six hours a term (four hours for upperclassmen). Drill, daily at 8 or 12; lecture T Th 10.

203. COMPOSITION AND CONVERSATION

Fall term as required. Credit three hours. Prerequisite, Qualification in Italian. T Th 3-4:30.

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 3-4:30.

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. Hours to be arranged.

Intensive study of the *Divine Comedy*.

361-362. THE MODERN NOVEL

Throughout the year. Credit four hours a term. Prerequisite, Italian 313-314 or consent of the instructor. T Th 3-4:30. Mr. Biasin.

Fall term: Verga, Fogazzaro, D'Annunzio, Pirandello, Svevo, Moravia, Vittorini, Pratolini. Spring term: Pavese, Gadda, Bassani, Tomasi di Lampedusa, Calvino, Sciascia, Volponi, Brancati.

431. STRUCTURE OF ITALIAN

Fall term in alternate years. Credit four hours. Prerequisite, Qualification in Italian. M W F 9. Mr. Hall.

432. ITALIAN DIALECTOLOGY

Spring term in alternate years. Credit four hours. M W F 9. Mr. Hall.

[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.

521. CESARE PAVESE

Fall term. Credit four hours. Prerequisite, consent of the instructor. T 10-12. Mr. Biasin.

An examination of the writer's complete works.

600. SEMINAR IN ITALIAN LINGUISTICS

Offered in accordance with student needs. Credit four hours. Mr. Hall.

Japanese

Messrs. W. J. McCoy, D. B. Young, and Staff.

101-102. ELEMENTARY COURSE

Throughout the year. Credit six hours a term (four hours for upperclassmen). 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 Buñgo 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 Buñgo and Kañbuñ styles of literature.

401-402. JAPANESE READING FOR STUDENTS OF CHINESE

Throughout the year. Credit three hours a term. Prerequisite, reading knowledge of Chinese and consent of the instructor. Hours to be arranged. Mr. McCoy.

An introduction to the grammar of modern written Japanese and readings in selected scholarly texts. Designed specifically to enable the student to follow Japanese research published in his own field and to assist him in using the Japanese books, journals, and reference works appropriate to Chinese studies.

Javanese

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, Javanese 222 or the equivalent. Hours to be arranged. Not offered in 1966-67.

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, A. L. Lipson, P. Lowe, Jr., J. W. Marchand, J. McCoy, M. D. Saltarelli, D. F. Solá, J. U. Wolff, and Staff.

Linguistics 201-202 satisfies Distribution I in the Social Sciences.

The major in Linguistics has three prerequisites: (1) Linguistics 201-202; (2) Qualification in two languages, one from the familiar European group (Latin, Greek, French, Italian, Portuguese, Spanish, German, Russian) and one from the other languages offered at Cornell, with six hours beyond Qualification in one or the other of these two; (3) a two-semester sequence in a related discipline (e.g. the literature of the language in which six hours beyond Qualification was offered as a prerequisite; Anthropology 101 and 265 or 101 and 272; Mathematics 111-112 or 111 and 122; Philosophy 110 and 205; Psychology 101 and 208 or 101 and 115; Sociology 101 and 202 or 101 and 281). The major will require completion of Linguistics 302, 303, 403-404 plus twelve hours in Linguistics at the 400- or 500-level chosen in consultation with the adviser. Prospective majors should consult Mr. Gair.

COURSES FOR UNDERCLASSMEN

201-202. INTRODUCTION TO THE SCIENTIFIC STUDY OF LANGUAGE

Throughout the year. Credit three hours a term. M W F 10. Mr. Kelley.

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, comparative 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 four hours. Prerequisite, Linguistics 301 or consent of the instructor. M W F 9. 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 F 10. 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, Mr. Gair or Mr. Kelley. Not offered in 1966-67.

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 2:30. Mr. Agard.

[443-444. COMPARATIVE ROMANCE LINGUISTICS]

Throughout the year in alternate years. Credit four hours a term. T Th 2-3:30. Mr. Hall. Not offered in 1966-67.

[445. PROBLEMS AND METHODS IN ROMANCE LINGUISTICS]

Fall term every third year. Credit four hours. M W F 9. Mr. Hall. Will be offered again in Fall 1967.

[446. ROMANCE DIALECTOLOGY]

Spring term every third year. Credit four hours. M W F 9. Mr. Hall. Will be offered again in Spring 1968.

[449. AREAL TOPICS IN ROMANCE LINGUISTICS]

Fall term every third year. Credit four hours. Course may be repeated. Hours to be arranged. Will be offered again in Fall 1967.

ETHNOLINGUISTICS AND PSYCHOLINGUISTICS

(See Anthropology 461.)

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.

A study of the methods and techniques in comparative linguistics; application of these methods to various language families depending on the student's background.

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 fours. 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 literary 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.

A comparative study of the phonology and morphology of the Indo-European languages and of their interrelationships.

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 a term. Hours to be arranged. Not offered in 1966-67.

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.

537-538. OLD JAVANESE

Throughout the year. Credit four hours a term. Hours to be arranged. Mr. Echols.

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.

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. Foos.

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.

[573-574. MALAYO-POLYNESIAN 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. Wolff. Not offered in 1966-67.

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 literary 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 (four hours for upperclassmen). M-F 2, plus three 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. M-F 11.

221-222. ELEMENTARY COURSE

Throughout the year. Credit three hours a term. Prerequisite, Qualification in Spanish and consent of the instructor. M W F 10.

A basic course designed principally for students majoring in Spanish or interested especially in Portugal or Brazil. Phonology, grammar, listening comprehension, and reading.

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. F. Foos, G. Gibian, Miss Antonina Glasse, Mr. M. Horwitz, Mrs. Augusta L. Jaryc, Messrs. R. L. Leed, A. L. Lipson, H. M. Olmsted, 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, 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 I Russian 201-202 may *not* be counted as a course in literature.

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 (four hours for upperclassmen). Students who have previously studied Russian should consult page 12 before registering for this course. Fall term: drill, daily at 8, 9, 10, 11, or 12; lecture, M W 2 or T Th 11. Spring term: drill, daily at 8 or 11; lecture, M W 9.

102. ELEMENTARY COURSE

Either term. Credit six hours (four hours for upperclassmen). 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.

112. ELEMENTARY COURSE

Either term. Credit three hours. Prerequisite course for students entering above the level of placement in Russian 102. Hours to be arranged.

121. ELEMENTARY READING COURSE

Fall term. Credit three hours. Open only to senior non-Arts students with written permission from their colleges. Hours to be arranged.

Designed to help students going on to graduate school to acquire a reading knowledge of the language.

122. ELEMENTARY READING COURSE

Spring term. Credit three hours. Open only to senior non-Arts students with written permission from their colleges. Prerequisite, Russian 121 or its equivalent. Hours to be arranged.

Designed to help students going on to graduate school to acquire a reading knowledge of the language.

151. ELEMENTARY GRADUATE READING COURSE

Fall term. Open only to graduate students. Hours to be arranged.

Designed to help students prepare for the graduate reading examination administered by the Graduate School.

152. ELEMENTARY GRADUATE READING COURSE

Spring term. Open only to graduate students. Prerequisite, Russian 151 or consent of the instructor. Hours to be arranged.

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 12). 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: M W F 3.

202. RUSSIAN READING

Either term. Credit three hours. Prerequisite, Russian 201. Fall term: M W F 3. 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 12). Students who have passed Courses 102 or 112 but failed Qualification may be admitted on consent of Mr. Leed. M W F 11, 12, 2, plus lectures at T Th 9 or 10.

204. COMPOSITION AND CONVERSATION

Spring term. Credit three hours. Prerequisite, Russian 203. M W F 11, 12, 2, plus lectures at T Th 9 or 10.

RUSSIAN LITERATURE (Comparative Literature 207-208)

In translation. Throughout the year. Credit three hours a term. M W F 12. Miss Carden.

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. M W F 3. 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 (Comparative Literature 367)

In translation. Fall term. Credit four hours. T Th S 9. Mr. Gibian.

Turgenev, Tolstoy, Dostoevsky.

[SOVIET LITERATURE (Comparative Literature 368)]

In translation. Spring term. Credit four hours. M W F 10. Mr. Horwitz. Not offered in 1966-67.

314. INTELLECTUAL TRENDS IN NINETEENTH-CENTURY RUSSIA

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

[332. RUSSIAN DRAMA]

Credit four hours. Prerequisite, Russian 202 and consent of the instructor. Not offered in 1966-67.

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. Mr. Horwitz.

Gogol, 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.

The study of the divisions of the Russian language chronologically and geographically; the relationships of the Russian language, the Slavic group,

the Indo-European group; the changes in the sounds and forms of the Russian language; vocabulary borrowings from Eastern and Western languages.

[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. Lipson. Not offered in 1966-67.

[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. Lipson. Not offered in 1966-67.

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.

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. Not offered in 1966-67.

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. Lipson. Not offered in 1966-67.

[502. OLD RUSSIAN]

Spring term in alternate years. Credit four hours. Hours to be arranged. Mr. Leed. Not offered in 1966-67.

517-518. RUSSIAN STYLISTICS

Throughout the year. Credit four hours a term. Hours to be arranged. Miss Glasse.

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 1966-67.

521. RUSSIAN LITERATURE FROM THE BEGINNINGS TO 1700

Spring term. Credit four hours. Reading knowledge of Russian required. M W F 2.

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. Miss Glasse.

523. EARLY NINETEENTH-CENTURY LITERATURE

Fall term. Credit four hours. Conducted partly in Russian. Hours to be arranged. Miss Glasse.

[531. PROSE WRITERS, 1890-1917]

Fall term. Credit four hours. M W F 3. Mr. Horwitz. Not offered in 1966-67.

534. STUDIES IN THE PROSE OF ANDREI BELY

Fall term. Credit four hours. M W 3 and one hour to be arranged. A study of Bely's major prose in relation to selected works of the period. Mr. Horwitz.

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. Leed, Mr. Lipson, or Mr. Foos.

601. INTRODUCTION TO GRADUATE STUDY

Fall term. Credit four hours. Hours to be arranged. Staff.

Required of all first-year graduate students majoring in Russian literature. 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 to be announced. May be taken repeatedly. Miss Carden. Not offered in 1966-67.

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 (four hours for upperclassmen). Hours to be arranged.

See also Linguistics 331, 432, 521, 522, 530, 531, 532, 534.

201-202. SINHALESE READING

Throughout the year. Credit three hours a term. Prerequisite, Qualification in Sinhalese. Hours to be arranged.

Spanish

Messrs. F. B. Agard, C. Bandera, J. S. Bernstein, D. Brenes, J. Kronik, 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 (four hours for upperclassmen). Students who have previously studied Spanish should consult page 12 before registering

for this course. 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 (four hours for upperclassmen). Prerequisite, Spanish 101 or its equivalent. Students who have previously studied Spanish should consult page 12 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 T Th S 11 or 12; lecture F 9. Spring term: drill M W F 9 or T Th S 12; lecture F 11.

201. INTRODUCTION TO HISPANIC LITERATURE

Either term. Credit three hours. Prerequisite, Qualification in Spanish. (For definition of Qualification see page 12). M W F 8 or 12; T Th S 9. Mr. Brenes, Mr. Kronik, and 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 12). 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. 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 10.

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 10.

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. Mr. Brenes.

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.

329. MEXICAN REVOLUTIONARY NOVEL

Fall term. Credit four hours. Prerequisite, Spanish 201 or consent of the instructor. M W F 10. Mr. Bernstein.

Reading and class discussion of works of Azuela, López y Fuentes, Guzmán, Ferretis, and others. Attention will be devoted to the social and political background of the Revolution, and to recent novels on revolutionary topics.

353-354. THE HISPANIC 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. Bernstein.

Reading and class discussion of significant novels of Spain and Spanish-America from Baroja to the present. Examination of various types of the modern novel, such as the *indigenista*, the *regionalista*, and the psychological.

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 or Mr. Saltarelli or Mr. Solá.

Fall term: reading and analysis of progressively older Spanish texts, ending with the earliest monuments of Spanish literature. Spring term: the development of Spanish phonology, grammar, and lexicon from its Latin origins to modern times.

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.)

411. INTRODUCTION TO MEDIEVAL LITERATURE

Fall term. Credit four hours. Prerequisite, a Spanish 300-level literature course or consent of the instructor. M W F 2. Mr. Selig.

Critical analysis of major texts of Spanish medieval literature: Poema de

Mio Cid, Libro de buen amor, the works of Alfonso the Learned, and representative selections from early prose fiction.

517-518. GRADUATE SEMINAR IN HISPANIC LITERATURE

Throughout the year. Credit four hours. Th 2-4. Mr. Selig.

Topic: Historians and Humanists of the period of Charles V. Fall term: The Classical Tradition and the Discovery of the Past. Spring term: The Discovery of the New World.

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 (four hours for upperclassmen). Prerequisite, consent of the instructor. Hours to be arranged. Offered according to demand.

403. LINGUISTIC STRUCTURE OF TAGALOG

Either term. Credit four hours. Prerequisite, Linguistics 201 or 301. Hours to be arranged. Mr. Wolff.

Telugu

Mr. G. B. Kelley and Staff.

101-102. ELEMENTARY COURSE

Throughout the year. Credit six hours a term (four hours for upperclassmen). Hours to be arranged.

201-202. TELUGU READING

Throughout the year. Credit three hours a term. 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 (four hours for upperclassmen). 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 four 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 (four hours for upperclassmen). 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 (four hours for upperclassmen). 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.

305-306. VIETNAMESE LITERATURE

Throughout the year. Credit four hours a term. Prerequisite, Vietnamese 301-302 or consent of the instructor. Hours to be arranged. Mr. Jones.

Reading of selections from contemporary literature.

MUSIC

Mr. W. A. Campbell, Chairman; Messrs. W. W. Austin, D. J. Grout, W. C. Holmes, J. T. H. Hsu, K. Husa, R. Jackoboice, J. Kirkpatrick, Noël Lee, Miss Janet Levy, Messrs. David 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 C 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 or 453; 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 designed 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 151-152, 211-212, 213-214, 215-216, 213-321-322, 213 plus any three hours in courses 331 through 338, or by six hours in any other courses for which a student is qualified and has the approval of the Music Department.

For Distribution II a combination of studies in theory, history, and performance is recommended: students may consult a member of the Department to plan the best sequence for their individual interests and abilities. Music 313 and 314 are especially designed for Distribution II, in coordination with historical and literary studies. Except for Music 211-212, any course not used for Distribution I may be appropriate in some sequences.

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. 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. Mr. Jackoiboice. 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. Mr. 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. M W 12 and Th 2. Mr. Palmer.

Advanced problems of contrapuntal writing in three voices. An introduction to invertible counterpoint and fugal writing. Representative works employing the fugal principle will be analyzed with particular attention to those of J. S. Bach.

452. COMPOSITION (PROSEMINAR)

Spring term. Credit four hours. Prerequisite, Music 352 or equivalent. May be repeated for credit. M W 11. Mr. Husa.

Problems of writing in the smaller forms and in various media. Class discussion and performance, with analysis of contemporary works. The basic techniques of composition and their extensions in the twentieth century will be related to individual abilities and needs. Students will be required to attend the Friday afternoon reading sessions of student compositions and occasionally to attend rehearsals of the Cornell musical organizations and ensembles.

[453. ADVANCED COUNTERPOINT AND ANALYSIS: SIXTEENTH CENTURY]

Fall term. Credit four hours. Prerequisite, Music 352 or equivalent. Not offered in 1966-67.

455. ORCHESTRATION

Fall term. Credit four hours. Prerequisite, Music 352. M W 11. Mr. Husa.

A study of the instruments of the orchestra and their use in representative works from 1700 to the present. Scoring for various instrumental groups including large orchestra. Students will occasionally attend rehearsals of the Cornell musical organizations and ensembles.

[461-462. ORCHESTRAL CONDUCTING AND SCORE READING]

Throughout the year. Credit two hours a term. Prerequisite, Music 352. First term prerequisite to second. Mr. Husa. Not offered in 1966-67; will be offered in 1967-68.

463-464. CHORAL CONDUCTING AND SCORE READING

Throughout the year. Credit two hours a term. Prerequisite, Music 352. Th 2-4. Mr. Sokol.

A study of the techniques of choral music: conducting, score reading, rehearsing, and arranging music for chorus.

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 conferences to be arranged. Mr. Austin and Staff.

Especially for students just beginning to take an interest in concert music. The symphonies are studied chiefly through phonograph records—fall term V, VI, I, Wellington's Victory, and III; spring term VII, VIII, II, IV, and IX. Selected piano sonatas and other works are presented in live performance.

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 8:15 p.m. on Oct. 11, Dec. 13, Jan 10, and Mar. 7. Mr. Austin and Assistants.

A survey of old and new, easy and difficult music, designed to speed up the continuing development of various independent tastes. First term systematic, second term historical. Frequent short written reports based on listening, beating time, and singing.

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. M 7-10 p.m. Mr. Grout.

Study of selected works and their historical environment. In 1966 the subject will be "Opera in the Twentieth Century."

314. THE GREAT TRADITION IN MUSIC

Spring term. Credit four hours. Prerequisite, consent of instructor. M 7-10 p.m. Mr. Grout.

Intensive study of a single work or group of works as representative of a given tradition and style. In 1967 the subject 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 Beethoven. Intensive study of musical scores, readings from theoretical sources (in translation), and written reports.

481. HISTORY OF MUSIC II

Fall term. Credit four hours. Prerequisite, Music 382. M 2-4 and individual conferences. Mr. Grout.

History of musical styles from the time of Beethoven to the present.

483. MUSICOLOGY (PROSEMINAR)

Spring term. Credit four hours. Prerequisite, Music 481. M 2-4. Mr. Grout.

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 (undergraduate only), 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: \$20 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

T 4:30-5:30, Th 7:15-8:45, Sunday 9:30 a.m. Messrs. Paterson and 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 Jackoboice.

441-442. CHAMBER MUSIC ENSEMBLE

Hours to be arranged. Messrs. Montagu and Hsu.

443-444. CHAMBER SINGERS

M 3-4:30. Messrs. Sokol and Hsu.

Study and performance of selected vocal music. Occasionally viols, recorders, and other instruments may be employed.

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

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. INTRODUCTION TO CONTEMPORARY MUSIC

Spring term. Credit two hours. Prerequisite, Music 352 or equivalent. T 9. Mr. Palmer.

Approaches to the analysis of short works of representative composers, with emphasis on only one or two techniques in each composition.

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. Mr. Samuel.

The basic materials and techniques of musicological research.

585-586. DEBUSSY TO BOULEZ

Throughout the year. Credit four hours a term. Prerequisites Music 580 and 582 or equivalent. Th 2-4. Mr. Austin.

Historical studies in twentieth-century music. Each student will study many works of a single composer, in relation to that composer's life and thought and especially his knowledge of other music. Composers will be chosen in accordance with the students' abilities and interests.

680. CONTEMPORARY MUSIC (SEMINAR)

Spring term. Credit two hours. Prerequisite, Music 580. T 10. Mr. Palmer.

Detailed analysis of a limited number of larger works representative of main trends in twentieth-century music (different works chosen each year).

681-682. MUSICOLOGY (SEMINAR)

Throughout the year. Credit four hours a term. T 2-4. Mr. Grout.

683-684. PALEOGRAPHY

Throughout the year. Credit four hours a term. Prerequisite, reading knowledge of French and German. Reading knowledge of Latin is desirable. Th 2-4. Mr. Holmes.

Studies in the history of musical notation from the tenth to the sixteenth centuries. Transcriptions and performance from original notation.

685-686. HISTORY OF OPERA (SEMINAR)

Throughout the year. Credit four hours a term. M 9-11. Mr. Grout.

Specialized independent studies.

PHILOSOPHY

Mr. N. Malcolm, Chairman; Messrs. J. F. Bennett, M. Black, S. M. Brown, Jr., J. V. Canfield, R. C. Coburn, K. S. Donnellan, B. C. Goldberg, N. Kretzmann, D. B. Lyons, N. C. Pike, D. Sachs, S. S. Shoemaker, R. R. K. Sorabji, A. W. Stewart, M. A. G. Stocker, and G. H. von Wright.

Students expecting to major in philosophy must begin their systematic study of it in their underclass years. For admission to the major, the normal requirement is passing a philosophy course above 200 with a grade of C or above. Application for admission is made to 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 301, 303, 305, 306, and 307; (2) at least two courses numbered above 400; and (3) at least eight hours of approved upperclass courses in related subjects.

For provisional acceptance as a candidate for Honors, a student must have chosen a philosophy major, have a cumulative average of B— for all work in the College, and have an average of B for courses in philosophy. All candidates for Honors must take the Honors Seminar (Philosophy 601) at least once in their junior or senior years. In their senior year, they pursue a program of research (taking Philosophy 490) in either the fall or spring term leading to the writing of an Honors essay. All candidates for Honors must also take two additional courses numbered above 400.

The Distribution I requirement in the Humanities is satisfied in philosophy by completing any of the following sequences: 100 or 101 plus any 200 or 300 course, excluding 212; any two courses at the 200- or 300-level, excluding 212. The Distribution II requirement is satisfied in philosophy by any combination of courses at the 200-level or above.

The 300-courses are normally open only to undergraduates and to graduate students in other fields. Graduate students in philosophy may be permitted to enroll in 300-courses by special action of the Department. 400-courses will be open to graduate students and upperclassmen.

100. FRESHMAN SEMINAR IN PHILOSOPHY

Either term. Credit three hours. Open only to freshmen who have not taken Philosophy 101. Registration is limited to 20 students a section. Fall term: M W 3-4:30, Mr. Malcolm, Mr. Sachs; T Th 3-4:30, Mr. Shoemaker, Mr. Stewart. Spring term: M W 3-4:30, Mr. Sorabji; T Th 3-4:30, Mr. Donnellan, Mr. Kretzmann.

101. INTRODUCTION TO PHILOSOPHY

Either term. Credit three hours. Open only to freshmen and sophomores who have not taken Philosophy 100. Registration is limited to 30 students a section. Fall term: M W F 9, Mr. Stocker; M W F 11, Mr. Stocker; T Th S 10, Mr. Stewart; T Th S 12, Mr. Goldberg. Spring term: T Th S 9, Miss Frye; M W F 11, Mr. Stewart; T Th S 12, Mr. Goldberg.

An introduction to philosophical ideas and problems through an intensive study of the writings of several major philosophers.

201. ANCIENT AND MEDIEVAL PHILOSOPHY

Fall term. Credit four hours. Open to sophomores and upperclassmen. 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.

210. PHILOSOPHICAL PROBLEMS

Either term. Credit four hours. Open to sophomores and upperclassmen and to freshmen who have taken 100 or 101. Recommended for prospective majors in philosophy. Registration is limited to 35 students.

The study of a selected philosophical problem. Contemporary as well as classical sources.

Fall term: T Th S 11. Discussion sections to be arranged. Mr. Shoemaker. Topic for 1966-67: Space and Time.

Spring term: M W F 10. Discussion sections to be arranged. Mr. Malcolm. Topic for 1966-67: Perceiving, Sensing, and Knowing.

212. INTRODUCTION TO SYMBOLIC LOGIC

Either term. Credit four hours. No prerequisite. Fall term: M W F 10, Mr. Kretzmann. Spring term: T Th S 10, Mr. Lyons. Discussion sections to be arranged.

An introduction to the principles and techniques of symbolic logic. Includes a discussion of propositional and predicate logic, deductive systems, and logical concepts relevant to philosophy.

215. SEMANTICS

Fall term. Credit four hours. Open to sophomores and upperclassmen. M W F 2. Discussion sections to be arranged. Mr. Donnellan.

A survey of the philosophy of language and symbolism. Topics include the nature and limits of language, theories of meaning, artificial languages, conceptual schemes, types of discourse, and philosophical implications of contemporary linguistics.

223. SOCIAL AND POLITICAL PHILOSOPHY

Spring term. Credit four hours. Open to sophomores and upperclassmen and to freshmen who have taken 100 or 101. M W F 11. Discussion sections to be arranged. Mr. Stocker.

A philosophical examination of some of the more important political and social theories of Western culture, e.g. the contract theory of the state, natural law, etc. Reading from such writers as Hobbes, Locke, Hume, Nietzsche, Hitler, and Marx.

225. ETHICS

Fall term. Credit four hours. Open to sophomores and upperclassmen. M W F 9. Discussion sections to be arranged. Mr. Lyons.

An introduction to moral philosophy through a study of several classic works in ethics from Plato to G. E. Moore, emphasizing problems and concepts.

[301. MODERN PHILOSOPHY]

Not offered in 1966-67.

303. MEDIEVAL PHILOSOPHY

Fall term. Credit four hours. Prerequisite, two courses in philosophy or consent of the instructor. M W F 12. Discussion sections to be arranged. Mr. Kretzmann.

Topic for 1966-67: Universals, truth, faith and reason, the existence and nature of God.

304. ANCIENT PHILOSOPHY AND SCIENCE

Fall term. Credit four hours. Open to upperclassmen and to sophomores who have taken Philosophy 201 or History 311. T Th S 11. Discussion sections to be arranged. Mr. 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]

Not offered in 1966-67.

306. LOCKE, BERKELEY, AND HUME

Spring term. Credit four hours. Open to sophomores and upperclassmen who have taken one course in philosophy. T Th S 11. Discussion sections to be arranged. Mr. Shoemaker.

A study of the theories of the classical empiricists.

307. KANT

Spring term. Credit four hours. Prerequisite, two courses in philosophy or consent of the instructor. T Th S 10. Discussion sections to be arranged. Mr. Goldberg.

An examination of the *Critique of Pure Reason*. Among the topics to be discussed are Kant's theory of space and time, his drawing of the analytic-synthetic distinction, and his attempted proof that there are synthetic *a priori* propositions.

[308. CONTEMPORARY PHILOSOPHY]

Not offered in 1966-67.

[309. AMERICAN PHILOSOPHY]

Not offered in 1966-67.

314. INTRODUCTION TO PHILOSOPHY OF MATHEMATICS

Spring term. Credit four hours. Open to juniors and seniors. No prerequisites for majors in philosophy or mathematics with at least six hours credit in the major subject; others by permission of the instructor. M W F 12. Discussion sections to be arranged. Mr. Black.

Topics will be selected from the following: definition of natural numbers (Peano's axioms; the logical analyses of Frege and Russell; the standpoints of formalism and intuitionism); extension of the number system to rationals, real numbers and imaginary numbers; the notions of function and set; infinity and continuity; the axiomatic method; the nature of geometry (with special attention to non-euclidean geometry); relations between pure mathematics and its "applications."

320. PHILOSOPHY IN LITERATURE

Spring term. Credit four hours. Open to upperclassmen and to others by consent of the instructor. M W F 12. Discussion sections 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*.

[321. AESTHETICS]

Not offered in 1966-67.

322. PHILOSOPHY OF RELIGION

Fall term. Credit four hours. Open to sophomores and upperclassmen. T Th S 12. Discussion sections to be arranged. Mr. Coburn.

A philosophical examination of some major theological issues: religious experience, religious language, arguments for the existence of God, miracles, faith.

323. LAW, SOCIETY, AND MORALITY

Fall term. Credit four hours. Open to sophomores and upperclassmen. M W F 11. Discussion sections to be arranged. Mr. Lyons.

An examination of connected problems in moral, legal, and political philosophy, with emphasis on the nature of and relations between law and morals.

325. ETHICAL THEORY

Spring term. Credit four hours. Open to sophomores and upperclassmen who have taken one course in philosophy. M W F 9. Discussion sections to be arranged. Mr. Stocker.

A systematic study of one or two types of ethical theory.

Topic for 1966-67: Utilitarianism and its critics.

[327. INTRODUCTION TO PHILOSOPHY OF SCIENCE]

Not offered in 1966-67.

333. PHILOSOPHY OF PSYCHOLOGY

Fall term. Credit four hours. Open to sophomores and upperclassmen who have had one course in philosophy, to others by consent of the instructor. M W F 10. Discussion sections to be arranged. Mr. Malcolm.

Topics will include the relationship between mental states and bodily states and behavior, the nature of unconscious mental states, and the central ideas of Freudian psychology.

403. PLATO AND ARISTOTLE

Spring term. Credit four hours. Open to philosophy majors, graduate students, and others by consent of the instructor. M W F 11. Discussion sections to be arranged. Mr. Sorabji.

Topic for 1966-67: To be announced.

412. DEDUCTIVE LOGIC

Fall term. Credit four hours. Open to philosophy majors and graduate students, and others by consent of the instructor. M W F 12. Discussion sections to be arranged. Mr. Donnellan.

A survey of current methods of formal logic with emphasis on their philosophical implications and applications. Topics include quantification theory, theory of descriptions, properties of formal systems, set theory, logical paradoxes.

[413. DEDUCTIVE LOGIC]

Not offered in 1966-67.

414. PHILOSOPHY OF LOGIC

Fall 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. T Th S 11. Mr. Bennett.

Topic for 1966-67: Meaning, Propositions, and Entailment.

415. PROBLEMS IN PHILOSOPHY OF LANGUAGE

Fall term. Credit four hours. Open to philosophy majors and graduate students, and to others by consent of the instructor. T Th S 10. Discussion sections 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.

[416. METAPHYSICS]

Not offered in 1966-67.

[417. THEORY OF KNOWLEDGE]

Not offered in 1966-67.

425. CONTEMPORARY ETHICAL THEORY

Spring term. Credit four hours. Open to philosophy majors and graduate students, and to others by consent of the instructor. T Th S 12. Discussion sections to be arranged. Mr. Lyons.

Topic for 1966-67: The Naturalistic Fallacy.

[427. PROBLEMS IN PHILOSOPHY OF SCIENCE]

Not offered in 1966-67.

433. PROBLEMS IN ETHICS AND PHILOSOPHY OF MIND

Spring term. Credit four hours. Open to upperclassmen and graduate students. Prerequisite, two courses in philosophy or consent of the instructor. M W F 2. Discussion sections 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 1966-67: To be announced.

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

Fall term. Credit three hours. Th 3-5. Mr. Coburn.

Topic for 1966-67: Belief and Religious Belief.

576. PLATO

Fall term. Credit three hours. T 3-5. Mr. Sachs.

Topic for 1966-67: An examination of Plato's later dialogues.

580. MEDIEVAL PHILOSOPHY

Spring term. Credit three hours. M 3-5. Mr. Kretzmann.

Topic for 1966-67: Medieval logic and semantics.

[585. ETHICS AND VALUE THEORY]

Not offered in 1966-67.

[587. AESTHETICS]

Not offered in 1966-67.

588. METAPHYSICS

Fall term. Credit three hours. W 3-5. Mr. Bennett.

Topic for 1966-67: Locke, Berkeley, and Hume.

589. METAPHYSICS

Spring term. Credit three hours. Th 3-5. Mr. Shoemaker.

Topic for 1966-67: To be announced.

590. PHILOSOPHY OF LANGUAGE

Spring term. Credit three hours. W 3-5. Mr. Donnellan.

Topic for 1966-67: Referring and Denoting.

594. THEORY OF KNOWLEDGE

Spring term. Credit three hours. T 2-4. Mr. Malcolm.

Topic for 1966-67: To be announced.

595. SEMANTICS AND LOGIC

Fall term. Credit three hours. M 2-4. Mr. Black.

Topic for 1966-67: To be announced.

601. HONORS SEMINAR

Spring term. Credit four hours. F 3-5. Mr. Stewart.

Topic for 1966-67: Ludwig Wittgenstein, *Blue and Brown Books*.

PHYSICS

Mr. L. G. Parratt, Chairman; Messrs. V. Ambegaokar, N. W. Ashcroft, L. L. Barnes, B. W. Batterman, K. Berkelman, H. A. Bethe, R. Bowers, B. H. Brandow, A. A. Browman, A. N. Bunner, P. A. Carruthers, B. M. Casper, D. G. Cassel, G. V. Chester, D. D. Clark, D. R. Corson, R. M. Cotts, T. R. Cuykendall, J. P. Devaille, J. W. DeWire, D. A. Edwards, G. H. U. Eilenberger, D. B. Fitchen, H. Goldberg, K. Gottfried, K. I. Greisen, D. E. Groom, F. L. Gross, L. N. Hand, P. L. Hartman, D. F. Holcomb, T. Kinoshita, J. A. Krumhansl, J. S. Langer, D. M. Lee, R. M. Littauer, E. C. Loh, H. Mahr, B. W. Maxfield, B. D. McDaniel, N. D. Mermin, J. R. Merrill, N. B. Mistry, M. S. Nelkin, H. F. Newhall, J. Orear, R. O. Pohl, A. L. Read, J. D. Reppy, T. N. Rhodin, R. Rubinstein, E. E. Salpeter, B. M. Siegel, A. J. Sievers, J. Silcox, R. H. Silsbee, A. Silverman, R. L. Sproull, P. C. Stein, R. M. Talman, W. 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 by the Cornell Department of Physics just before the start of classes

in the fall. Note that an entering freshman may proceed directly into sophomore physics only if he has also advanced placement in calculus.

A student will ordinarily be admitted to a physics-major program, either Option A or B, if he has passed at a good level of proficiency one year of college physics (Physics 207–208 is strongly recommended, especially for Option A students) and one year 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. Minimal requirements: (a) thirty credit hours of physics courses selected from those indicated by the symbol # in the list below, including two of Physics 310, 360 and 410, Physics 443, and one of Physics 444 or 454, with twenty of these thirty hours at a grade of C or higher; and (b) Mathematics 421 (or 331 and 316); or the equivalent as judged by the student's major adviser. Graduate physics courses (numbered above 499) will not be accepted as substitutes in meeting requirement (a). It is strongly recommended that Option A major students (who do not have advanced placement) take Physics 207–208 and Mathematics 111–122 in the freshman year, and Physics 305 and either 310 or 360, and Mathematics 221–222, in the sophomore year. It is difficult to complete Option A starting physics in the sophomore year, and possible only if the student has completed freshman calculus before the start of the sophomore year.

Option B. Minimal requirements: (a) an intermediate course (numbered above 300) in mechanics, optics, electricity, experimental physics, and in modern physics; (b) three credit hours in mathematics beyond Mathematics 213, 221, or 293; and (c) fifteen credit hours in approved courses in the natural sciences with at least six of these fifteen 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 fifteen hours may be in history of science or philosophy of science. It is usually practical 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 Honors 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, e.g., Physics 303 or 310. 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 courses in another subject.

With a physics major, the Distribution II requirements may be satisfied in any of many ways. Commonly, mathematics courses beyond those required for the physics major 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 Physics 223-224 *vs* 225-226 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 this assignment.

Physics 337-338, following 226, contains parts of Physics 305, 307, 319, 325, and 326, 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, or 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 only one year of college physics, Physics 303, 322 (and preferably also 307) should precede 431.

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 a prerequisite to 102. 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 examina-

tions will be held at 8 p.m. Oct. 26, Nov. 30, Jan. 11, Mar. 8, Apr. 12, May 10. Messrs. Cotts, Casper, Greisen, Hand, Silsbee, 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. Historical and philosophical allusions as time permits. At the level of *Physics* by Atkins.

121-122. INTRODUCTORY ANALYTICAL PHYSICS I AND II

Throughout the year. (Physics 121 is also offered in the spring term, T Th S 9, for those 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 two and one half hour laboratory period every other week, as assigned. Preliminary examinations will be held at 7:30 p.m. on Oct. 25, Nov. 29, Jan. 10, Mar. 14, Apr. 11, May 16. Messrs. Newhall, Bowers, Brandow, Browman, Groom, McDaniel, 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 three hours. Prerequisites, Physics 102 or 208, six credit hours in college chemistry, and six in biological science. Students offering Physics 101-102 with an average grade below C or 70 must obtain permission of the instructor. Lectures, T Th 12. Individual conferences to be arranged. Mr. Barnes. Not offered in 1966-67.

Selected topics related to the study of biology are chosen from: properties of matter, electricity, electromagnetic radiation, and nuclear physics. One term paper required.

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). S or U grades optional. 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. 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 two-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. Holcolmb, R. Wilson, Goldberg, and Staff.

The central aim is to give non-science majors some insight into the methods and the results of physics and its neighboring sciences. A set of widely ranging but related topics will be considered, without attempt to cover much of the subject 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. 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, at least co-registration in Mathematics 111-112 or 191-192, or consent of the instructor. High school physics is a normal background but is not required. However, facility is assumed in mathematics and analytical thinking. Course 207 is prerequisite to 208. Intended as the first college-physics 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 two and one half hour laboratory period alternate weeks, as assigned. Preliminary examinations will be held at 7:30 p.m. on Nov. 1, Dec. 13, Mar. 7, and Apr. 18. Messrs. Mahr, Cassel, Gross, Maxfield, Merrill, Stein, 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 (or 102 by special permission), and Mathematics 112, or consent of the instructor. Not recommended for prospective physics majors who have had 208 or 208H. Lectures, discussions, and problems. M W F 12. Mr. Berkelman.

A continuation of Physics 207-208 with further emphasis on twentieth century concepts in physics.

223-224. INTRODUCTORY ANALYTICAL PHYSICS III AND IV

Throughout the year. (Physics 223 is also offered in the spring term, T Th S 11, for those 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. Lectures, T Th 9 or 11. Two discussion periods and one two and one half hour laboratory period every week, as assigned. (Not all of these six and one half hours will be used each week; class time per week will average five to five and one half hours.) Messrs. Talman, Bunner, Edwards, Orear, Silverman, 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 electromotance, fields in magnetic materials, energy of charge and current distributions, electrical oscillations, 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 electronics, optics, and nuclear physics. At the level of *Physics for Students of Science and Engineering* by Halliday and Resnick, and of *Elementary Modern Physics* by Weidner and Sells.

225-226. INTRODUCTORY ANALYTICAL PHYSICS III AND IV

Throughout the year. Credit four hours a term. Prerequisites, same as for Physics 223-224. Course 225 is prerequisite to 226. Class hours, same as for Physics 223-224. Messrs. Delvaille, Fitchen, Carruthers, 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 at least co-registration in Mathematics 213, 221, or 293, or consent of the instructor. T Th S 9. Mr. Gottfried.

Newtonian mechanics, conservation laws, central forces, oscillation systems, wave propagation, and relativity. At the level of *Physical Mechanics* by Lindsay.

#305. THE TWENTIETH-CENTURY REVOLUTION IN PHYSICS

Fall term. Credit four hours. Prerequisites, Physics 208H (or 208 with special permission), 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 8 and M or T 3. Messrs. Sproull and Goldberg.

Developments leading to modern physical concepts such as quantum theory of radiation, quantum mechanics, special relativity, and atomic structure. At the level of the first half of *Fundamentals of Modern Physics* by Eisberg.

307. OPTICS AND WAVE MOTION

Fall term. Credit four hours. Prerequisite, Physics 224 or 303, and Mathematics 213, or consent of the instructor. Lectures, T Th S 11 and S 12. Mr. Sievers.

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. An additional laboratory section will be opened in the spring term T Th 1:40-4:30 if registration exceeds 40 students. Mr. Read and Staff.

Lectures on topics in experimental techniques. Selected laboratory experiments to suit the student's need, e.g. resonance phenomena, electricity, magnetism, optics, spectroscopy, and modern physics.

311-312. TEACHING PRE-COLLEGE PHYSICS

Throughout the year. Credit two hours a term. Prerequisites, two years of college physics and an interest in science teaching. Offered only if enrollment exceeds seven students. Course 311 is not prerequisite to 312. T 1:40-4:30. Mr. Parratt.

Seminars and laboratory work. Emphasis is on the nature and design of recent pre-college programs in physics and in physical science. Underlying concepts and purposes are stressed, and current trends evaluated. Laboratory work provides experience with recently developed instructional materials, and opportunity for new developments by the students.

#319. ANALYTICAL MECHANICS

Fall term. Credit four hours. Prerequisites, Physics 208H (or 208 with special

permission) or 226, and co-registration in Mathematics 421, or consent of the instructor. T Th S 9 and Th or F 3. Mr. Silsbee.

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 Synge 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 307 and 310), and Mathematics 221, 294, 331 or 315, 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, and of *Electricity and Magnetism* by Purcell (Berkeley Physics Course, Vol. II).

#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 Th 3. Preliminary examinations will be held at 7:30 p.m. on Oct. 28, Dec. 9, Mar. 10, and Apr. 21. Fall term, Mr. Stein. Spring term, Messrs. Wilkins and Langer.

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, co-registration in Mathematics 421, or consent of the instructor. Primarily for students of engineering. Lectures, M W F 10 and T 2; discussion section, Th 3 or F 2. Preliminary examinations will be held at 7:30 p.m. on Oct. 17 and Dec. 5. 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 five hours. Prerequisites, Physics 337, and co-registration in Mathematics 422, or consent of the instructor. Primarily for students of engineering. Lectures, 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. Special relativity. 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.

#342. KINETIC THEORY AND THERMODYNAMICS

Spring term. Credit four hours. Prerequisites, Physics 305 (by special permission) or 322 or 325, and Mathematics 221 or 294 or 315, or consent of the instructor. T Th S 9 and either M or T 3. Mr. Reppy.

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 *Fundamentals of Statistical and Thermal Physics* by Reif, and *Thermal Physics* by Morse.

#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 and staff.

Introduction to the principles of semiconductor devices, electronic components and circuits, and to the operating characteristics of power supplies, amplifiers, oscillators, 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. Barnes. Offered in alternate years; not offered in 1966-67.

#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. Berkelman, Batterman, Cassel, Cotts, Cuykendall, DeWire, Loh, Mahr, Mistry, Reppy, Rhodin, Rubinstein, Siegel, Sievers, 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. 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 315 or 421 (preferably 415), or consent of the instructor. M W F S 9. Mr. Gross.

Classical mechanics and electromagnetic theory. At the level of *Theoretical Physics* by H. Wangsness.

436. MODERN PHYSICS

Spring term (also Fall term on sufficient demand). Credit four hours. Pre-

requisites, Physics 322, and Mathematics 221, 294, 331 or 315, or consent of the instructor. T Th S 11 and T 3. Mr. Woodward. (Fall term, Mr. Clark.)

Fundamentals of the quantum theory, and selected topics in atomic, solid state, and nuclear physics. 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 305, 319 and 325, or 338, or 431; and Mathematics 316 or 421; or consent of the instructor. Very few students may advisedly take Physics 572 instead of this course. T Th S 10 and M 9 or 3. Messrs. Bethe and Brandow.

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 Chemistry 593, or consent of the instructor. M W F 9 and M 3. Messrs. Bowers and Eilenberger.

A semiquantitative introduction to modern solid state physics, including lattice structure, lattice vibrations, thermal properties, electron theory of metals and semi-conductors, magnetic properties, and superconductivity. At the level of *Introduction to Solid State Physics*, second edition, by Kittel.

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 two hours 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. Fall term, F 1:40-4. Mr. Edwards. Spring term, W 1:40-4. 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 510 laboratory. Primarily for graduate students who do not have the prerequisites for Physics 510. T W or Th F 1:40-4:30. Instructing staff same as for Physics 410.

505-506. DESIGN OF ELECTRONIC CIRCUITRY

Throughout the year. Credit two hours each term. Prerequisites, Physics 360, Mathematics 315, familiarity with complex representation of a-c signals, 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. 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 consent of the instructor. At least one term of Physics 510 is ordinarily required of a graduate physics student during his first year at Cornell. Laboratory, T W or Th F 1:40-4:30. Instructing staff same as for Physics 410.

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. The student is expected to perform four to eight experiments, selected to meet his individual needs. Stress is laid on independent work.

561. THEORETICAL PHYSICS I

Fall term. Credit four hours. Prerequisites, Physics 319 and 325, or 338, or 431, and co-registration in Mathematics 415 or 423, or consent of the instructor. M 10 and T Th S 11. Mr. Chester.

Mechanics (about 7 weeks): Variational principles, Lagrangian mechanics with applications, Hamiltonian mechanics and Poisson brackets, small vibrations and normal modes, and symmetry principles. Electrodynamics (about 8 weeks): Maxwell's equations, electromagnetic potentials, stress energy, wave guides, Fresnel theory, and introduction to relativity. At the level of *Mechanics* by Landau and Lifshitz and of *Electricity and Magnetism* by Jackson.

562. THEORETICAL PHYSICS II

Spring term. Credit four hours. Prerequisite, Physics 561 and at least co-registration in Physics 572, or consent of the instructor. M 10 and T Th S 11. Mr. Mermin.

Electrodynamics and Relativity (about 6 weeks): Radiation, Lienard-Wiechert potentials, multipoles, relativity (continued), and relativistic applications. Statistical Physics (about 9 weeks): Laws of thermodynamics, introduction to phase change, ensemble theory, thermodynamic fluctuations, Fermi-Dirac and Einstein-Bose statistics with applications, transport phenomena, and interacting systems. At the level of *Electricity and Magnetism* by Jackson, and of *Statistical Physics* by Landau and Lifshitz.

572. QUANTUM MECHANICS

Either term. Credit four hours. Prerequisites, Physics 443, 561, and at least co-registration in Mathematics 415 or 423, or consent of the instructor. M W F 11 and S 9. Fall term. Mr. K. Wilson. Spring term, Mr. Nelkin.

Principles of wave mechanics. Illustrative solutions of the Schrödinger equation, scattering, Dirac's formulation of quantum mechanics, transformation theory, and approximation methods. Symmetries: angular momentum, spin, the exclusion principle. At the level of *Quantum Mechanics* by Messiah.

574. INTERMEDIATE QUANTUM MECHANICS

Spring term. Credit four hours. Prerequisites, Physics 572 and at least co-registration in Physics 562 and in Mathematics 416, or consent of the instructor. M W S F 10. Mr. Bethe.

Discussion of various applications of quantum mechanics such as collision theory, theory of spectra of atoms and molecules, theory of solids, emission of radiation, and relativistic quantum mechanics. At the level of *Quantum Mechanics of One- and Two-Electron Atoms* by Bethe and Salpeter.

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 lattice vibrations, the electronic structure of metals and of insulators, with applications to electrical, thermal and transport properties.

636. ADVANCED SOLID STATE PHYSICS

Spring term. Credit three hours. Prerequisite, Physics 635 or consent of the instructor. T Th S 11. Mr. Chester.

The concepts developed in Physics 635 are applied to a survey of the Fermi surface in metals, localized states, magnetism, neutron and light scattering, and phenomenological superconductivity.

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 574 or 645 or consent of the instructor. M W F 11. Mr. Silverman.

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.

NOTE: In courses above 650 the final grades will be only S or U.

651. ADVANCED QUANTUM MECHANICS

Fall term. Credit three hours. Prerequisite, Physics 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 *Relativistic Quantum Fields* by Bjorken and Drell.

653. STATISTICAL PHYSICS

Fall term. Credit three hours. Prerequisites, Physics 562 and 572, or consent of the instructor. T Th S 10. Messrs. Wilkins and Langer.

A survey of topics in contemporary statistical physics, such as the Boltzmann equation, plasmas, sound propagation, phenomenological Fermi liquid theory, critical phenomena of simple fluids and ferromagnetics, classical fluids, introduction to Kuo formulae and Green's functions, and superfluids. At the level of *Statistical Physics* by Landau and Lifshitz.

654. THEORY OF MANY-PARTICLE SYSTEMS

Spring term. Credit three hours. Prerequisites, Physics 574 and 635, or consent of the instructor. T Th S 10. Mr. Ambegaokar.

The equilibrium and transport properties of microscopic 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. Not offered in 1966-67.

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. Carruthers.

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 1966-67: Fall term: Group Theory, Mr. Ambegaokar, and Stellar Structure, Mr. Salpeter; spring term: Real Metals, Messrs. Wilkins and Ashcroft, and High-Energy Electron Interactions, Mr. Yennie.

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. M. Anisfeld, H. Bernbach, U. Bronfenbrenner, R. D. Darlington, S. W. Davis, W. C. Dilger, Mrs. Charlotte Doyle, Messrs. J. J. Gibson, H. J. Johnson, W. W. Lambert, H. Levin, R. Longabaugh, J. B. Maas, L. Meltzer, F. Rosenblatt, T. A. Ryan, H. J. Simmons, R. R. Zimmermann.

THE MAJOR. Prerequisites for admission are: (a) Psychology 101, C.D. 115, and Psychology 201 or 305 or 306 or 307; (b) a cumulative average of C+ in courses in Psychology with no grade below C in the prerequisites; (c) completion of Distribution I requirements by end of sophomore year; (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) A minimum of 30 additional hours in Psychology at the 200 level or above, including 3 further laboratory courses, one of which must be at the 400 level or above.

(b) Completion, no later than the end of the junior year, of an approved course in statistics, or the passing of an achievement examination administered by the Department.

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; Biological Sciences 521-522; Sociology 381, 384, 481, 581, 682. *One* of the two courses from outside the Psychology Department may also be chosen from the following: Industrial and Labor Relations 201, 311, 410; Interdepartmental course 404; Rural Education (Agriculture) 451, 453, 454.

CONCENTRATION IN SOCIAL PSYCHOLOGY. In cooperation with the Department of Sociology, a concentration in social psychology is available. Students who wish to concentrate in social psychology must major in either psychology or sociology. In psychology, the social psychology concentrator must meet normal requirements for the major with the following modifications: (a) One of the required laboratory courses must be a 300 level course in experimental social psychology (Psychology 342 or Sociology 381); (b) The student must take one advanced laboratory in social psychology (Sociology 481, Sociology 611, or Psychology 477); (c) The student must substitute for Psychology courses two courses in Sociology or one course in Sociology and one course in Anthropology, to be selected in consultation with the student's major adviser.

THE HONORS PROGRAM. Prospective candidates for Honors are encouraged to file applications for provisional Honors status as early as possible but not later than December 15th of the junior year. For acceptance, the candidate must have, at a minimum, a cumulative grade average of B 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. Planning for this investigation may begin in the junior year. In the senior year, Honors students take an Honors seminar (491) and prepare a thesis (492). Final Honors standing is

based upon 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, 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, cognitive development abilities, and group processes as they influence classroom learning will be stressed. Recent educational advances such as new curricula and programmed learning will be discussed in the light of contemporary psychological theories.

201. INTRODUCTION TO EXPERIMENTAL PSYCHOLOGY

Either 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.

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.

A survey of psychological research in problems of concern to business and industry. The course is divided into three units: (1) personnel selection and placement (interviewing, psychological testing); (2) conditions of efficient production (work methods, accident control, training, counseling, group dynamics, job satisfaction); and (3) advertising, market and motivation research.

208. INTRODUCTION TO PERSONALITY AND SOCIAL PSYCHOLOGY

Spring term. Credit four hours. Prerequisite, a course in psychology. T Th S 10. Mr. Meltzer.

The approaches of several theories—psychoanalytic, cognitive, and behavioral—are evaluated in relation to selected topics such as motivation, traits, attitudes, conformity, prejudice, and group behavior. Students will read extensively in modern and classic attempts to explicate the human condition.

212. MODERN PSYCHOLOGY IN HISTORICAL PERSPECTIVE

Spring term. Credit four hours. Prerequisite, Psychology 101 or C.D. 115, 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 INTERPERSONAL RELATIONS (Sociology 281)

Fall term. Credit three hours. Prerequisite, Sociology 101 or C.D. 115. M W F 11. Mr. Longabaugh.

The presentation and development of selected theories offered to account for why people relate to one another the way they do. These perspectives are compared and evaluated in terms of their adequacy in accounting for interpersonal relations. Student participations are solicited via class demonstrations, role play techniques, field studies, and participant observations.

305. BASIC PROCESSES: PERCEPTION

Fall term. Credit four hours. Prerequisite, Psychology 201 or consent of instructor. Lectures M W 9, Laboratory, Th 1:40-4.

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, an advanced laboratory course in psychology or biology or consent of instructor. Lectures T Th 10. Laboratory, T 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 10. 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. Not offered in 1966-67.

[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 1966-67.

313. COGNITIVE PROCESSES

Fall term. Credit four hours. Prerequisites, six hours of psychology and upperclass standing or honors standing (in any department), or consent of instructor. M W F 12. Mr. Anisfeld.

An examination of the mental processes involved in language learning and use, concept formation, and problem solving; relation between language and thinking. Students required to carry out a supervised experimental or observational study.

BRAIN MECHANISMS AND MODELS (Biological Sciences 521-522)

Throughout the year. Credit four hours a term. Prerequisites, one year of calculus and one year of biological sciences or psychology, and consent of instructor. Hours to be arranged. Mr. Rosenblatt with assistance of guest lecturers.

323. PHYSIOLOGICAL PSYCHOLOGY

Fall term. Credit four hours. Prerequisites, laboratory course in psychology, one year of biology or zoology or physiology, and one term of statistics; one of the prerequisites may be taken concurrently. M W 3-4, and four laboratory hours to be arranged. Mr. Simmons.

A survey of research on the physiological bases of behavior.

324. PSYCHOBIOLOGY

Spring term. Credit four hours. Prerequisites, a grade of at least B 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. M W F 9. 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, upperclass standing or consent of instructor. A laboratory course in the behavioral or biological sciences is desirable but not necessary. Lectures, T Th 11-1. Laboratory hours to be arranged. Mr. Zimmermann.

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.

332. INDUSTRIAL PSYCHOLOGY: PROBLEMS OF PEOPLE AT WORK

Spring term. Credit four hours. Prerequisites Psychology 101, 206, or consent of instructor. M W F 12 and laboratory hours to be arranged.

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.

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.

335. PSYCHOLOGICAL PROBLEMS OF ADVERTISING AND MARKET RESEARCH

Spring term. Credit four hours. Prerequisites, Psychology 101, three additional hours of psychology, upperclass standing and consent of instructor. M 2-4, plus one hour to be arranged. Mr. Maas.

Design of fundamental research in laboratory, field and survey studies of advertising and consumer behavior. Special attention is given to techniques of questionnaire construction, scaling, sampling, interviewing, and testing.

Students work on selected research projects, enabling them to become familiar with collection, processing and analysis of data.

[342. EXPERIMENTAL SOCIAL PSYCHOLOGY]

Spring term. Credit four hours. Prerequisites, 3 hours of psychology and 3 hours of sociology or anthropology. M W F 2.

Emphasis is on the empirical study of social psychological phenomena. Students will be introduced to empirical laboratory and field methods used in social psychology. Substantive problems will provide the focus for the demonstration and use of these techniques. Not offered in 1966-67.

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.

SOCIAL PSYCHOLOGY (Sociology 381)

Fall term. Credit four hours. Prerequisites, 3 hours of psychology and 3 hours of sociology.

Analysis of the history, concepts, methods, and theories used to describe and conceptualize the ways in which people react to one another. Students will work in teams on projects utilizing experimental or other empirical methods. The topics for investigation in student projects and in lectures will include such processes as attitude change, communication, interpersonal influence, conformity, leadership, and interpersonal affect.

GROUP DYNAMICS (Sociology 384)

Spring term. Credit four hours. Prerequisites, written permission of the instructor, 3 hours of psychology and 3 hours of sociology. M W F 2, and M 3 or W 3. Mr. Longabaugh.

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, upper-class 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 DESIGN IN PERSONALITY AND SOCIAL PSYCHOLOGY

Spring term. Credit four hours. Open to junior or senior psychology majors, or consent of instructor. M W F 11. Mr. Darlington.

Considers the major problems and techniques in designing research on human behavior. Considers both laboratory and non-laboratory research.

[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 1966-67.

416. PSYCHOLOGY OF LANGUAGE

Spring term. Credit four hours. Prerequisite, Psychology 313 or consent of instructor. M W 3:00-4:30. Mr. Anisfeld.

An advanced treatment of the nature of the human capacity for language, the reading process, social and psychological aspects of bilingualism, speech perception and production. Instruction will be supplemented by experimental exercises.

426. EXPERIMENTAL PSYCHOPATHOLOGY

Spring term. Credit four hours. Prerequisite, Psychology 325 or consent of instructor. M W 10 plus two-hour laboratory to be arranged. 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 (Biological Sciences 421)

Fall term. Credit three hours. Prerequisites, Biological Sciences 101-102, or 103-104 and permission of instructor. T Th 9 and laboratory to be arranged. Primarily for graduate students; upperclassmen will be accepted to capacity of laboratory. Mr. Dilger.

447. LABORATORY STUDY OF INTERPERSONAL INTERACTIONS

Spring term. Credit four hours. Prerequisites, Psychology 342 or 381, or graduate student status, or permission of instructor. T 1:40-4:30 and one additional hour. Mr. Longabough.

Topics in the study of interpersonal behavior are reviewed. Selected problems within these topic areas are empirically researched. Analyses include laboratory and field researches carried out by the students.

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.

[461. HUMAN LEARNING AND MEMORY]

Fall term. Credit four hours. Prerequisites, Psychology 101, 201 or 306, upper-class standing. Mr. Bernbach. Not offered in 1966-67.

[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 1966-67.

[465. MATHEMATICAL BEHAVIOR THEORY]

Spring term. Credit four hours. Prerequisite, one year of calculus. Mr. Bernbach.

The purpose of this course is to give a brief overview of current developments in mathematical psychology and to develop techniques for the application of mathematics to psychological theory. Topics covered include choice behavior, decision theory, psychophysics, memory and learning theory, and information processing models of behavior. Not offered in 1966-67.

[466. THEORIES OF VISION]

Spring term. Credit four hours. Prerequisite, consent of instructor. T Th S 11. Not offered in 1966-67.

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 co-variance, 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.

Instrumentation for the behavioral sciences.

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.

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. Subject matter emphasis to be decided by seminar members.

EXPERIMENTAL GROUP DYNAMICS (Sociology 481)

Fall term. Credit four hours. Prerequisites, a course in statistics and a course in social or experimental psychology. Open to upperclassmen and graduate students. Hours to be arranged.

A practicum. Supervised research experience in the design, execution, and analysis of experimental research on topics such as group cohesiveness, group pressures, group goals, leadership, group performance, and interpersonal influence and communication. Students will read and discuss experimental studies as well as pertinent theoretical articles.

486. SUPERVISED STUDY

Either term. Credit two hours. Staff.

487. SUPERVISED STUDY

Either term. Credit four hours. Staff.

490. PERSISTING PROBLEMS IN PSYCHOLOGY

Fall term. Credit four hours. T 2-4, plus conference hours to be arranged. Mr. MacLeod.

An examination of the classic problems of psychology in the light of recent research and theory. Open to senior majors in psychology (or from other fields by permission of the instructor), and recommended for those intending to pursue graduate study.

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.

220 ROMANCE STUDIES

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.

THEORY AND RESEARCH IN SOCIAL PSYCHOLOGY

(See Sociology 611.)

SEMINAR IN SOCIAL PSYCHOLOGY

(See Sociology 682.)

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

Mrs. Jean Parrish, 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, J.-J. Demorest, H. Dieckmann, D. I. Grossvogel, R. A. Hall, Jr., J. Kronik, E. P. Morris, 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, Miss Antonina Glasse, Mr. M. Horwitz.

For complete course listings and for details of the major, see the heading "Russian" under *Modern Foreign Languages and Literatures*.

SEMITIC LANGUAGES AND LITERATURES

Mr. I. Rabinowitz, Chairman; D. Patterson, A. L. Udovitch.

Students who elect Semitics as their major study must complete twenty-four hours of advanced courses offered by the Department (courses numbered above 201, except as specified below) and fifteen hours, approved by the Department, in related subjects. Related subjects may be selected by the student from course-offerings in other departments of the College which are relevant to his intellectual interests or to his preparation for professional training or graduate study.

Students whose major study is in Semitics may emphasize either Hebrew or Arabic language and texts, provided that at least nine hours of course-work be taken in the less-emphasized language; all courses in the less-emphasized language may be counted among the twenty-four needed to complete the major study.

Candidates for the degree of Bachelor of Arts with Honors in Semitics, in addition to fulfilling the requirements of the major study as outlined above, must 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 B or better should consult their major advisers before pre-registering for the second term of the Junior year.

The Distribution I requirement in Humanities is satisfied in Semitic literatures by any two courses in Hebrew at the 200 level or higher or by Arabic 207-208, provided the courses have not been used in fulfilling the language requirement.

Independent study may be arranged for students who have special interests or needs and are able to work in areas not covered by the courses.

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 or consent of the instructor. M W F 2. Mr. Rabinowitz.

Selected prose narratives of the Hebrew Old Testament.

204. POST-BIBLICAL HEBREW PROSE (1)

Spring term. Credit three hours. Prerequisites, Hebrew 201, or 3 units of entrance Hebrew and the consent of the instructor. Hours to be arranged.

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)

Fall term. Credit four hours. Prerequisites, Hebrew 204, or four units of entrance Hebrew and consent of the instructor. Hours to be arranged.

Readings in the Mishnah, in medieval theological and philosophical texts, and in the modern essay.

[306. POST-BIBLICAL HEBREW POETRY]

Spring term. Credit four hours. Prerequisite, Hebrew 305. Not offered in 1966-67.

[421. MIDRASH]

Fall term. Credit four hours. Prerequisite, Hebrew 305 or consent of the instructor. Not offered in 1966-67.

[423. TALMUD]

Fall term. Credit four hours. Prerequisite, Hebrew 305 and Aramaic 452, or consent of the instructor. Not offered in 1966-67.

432. MEDIEVAL HEBREW LITERATURE

Spring term. Credit four hours. Prerequisite, Hebrew 305 or consent of the instructor. Hours to be arranged. Mr. Patterson.

Study of a group of texts illustrative of several of the main genres of medieval Hebrew literature: Biblical exegesis, liturgical poetry, ethics, philosophy, mysticism, science, etc.

441. MODERN HEBREW LITERATURE

Fall term. Credit four hours. Open to qualified undergraduate and graduate students. Hours to be arranged. Mr. Patterson.

The development of modern Hebrew letters, both fiction and non-fiction, traced in selected works of the best writers from "Mendele" (S. J. Abramowitz, 1836-1917) and "Ahad Ha-'Am" (Asher Ginsberg, 1856-1927) to the present.

[451. ARAMAIC]

Fall term. Credit four hours. Prerequisite, Hebrew 201, Arabic 208, or consent of the instructor. Hours to be arranged. Mr. Rabinowitz. Not offered in 1966-67.

452. TALMUDIC ARAMAIC

Spring term. Credit four hours. Prerequisite, Hebrew 305 or consent of the instructor. Hours to be arranged. Mr. Rabinowitz.

Accidence and syntax of Galilean and of Babylonian Talmudic Aramaic; reading of selected passages from the Palestinian and Babylonian Talmuds and from Midrash Bereshith Rabba.

[471-472. SEMINAR]

Throughout the year. Credit four hours a term. For qualified undergraduate and graduate students. Not offered in 1966-67.

401. INDEPENDENT STUDY

Either term. Credit two hours. For qualified students. Staff.

402. INDEPENDENT STUDY

Either term. Credit four hours. For qualified students. Staff.

Arabic

105-106. ELEMENTARY LITERARY ARABIC

Throughout the year. Credit three hours a term. The first term is prerequisite to the second term. Hours to be arranged. Mr. Udovitch.

207-208. INTERMEDIATE LITERARY ARABIC

Throughout the year. Credit three hours a term. Prerequisite, Arabic 106 or consent of the instructor. Hours to be arranged. Mr. Udovitch.

Rapid reading of selected texts in the main genres of Arabic literature.

[317. ISLAMIC TEXTS IN ARABIC]

Fall term. Credit four hours. Prerequisite, Arabic 208 or consent of the instructor. Not offered in 1966-67.

[318. ARABIC GEOGRAPHERS AND HISTORIANS]

Spring term. Credit four hours. Prerequisite, Arabic 208 or consent of the instructor. Not offered in 1966-67.

[461. ARABIC PHILOSOPHERS]

Fall term. Credit four hours. Prerequisite, Arabic 317 or 318, or consent of the instructor. Not offered in 1966-67.

[462. MEDIEVAL ARABIC *BELLES LETTERS* ('ADAB)]

Spring term. Credit four hours. Prerequisite, Arabic 317 or 318, or consent of the instructor. Not offered in 1966-67.

[481. MODERN ARABIC LITERATURE]

Fall term. Credit four hours. Prerequisite, Arabic 318, or consent of the instructor. Not offered in 1966-67.

[482. ARABIC POETRY]

Spring term. Credit four hours. Prerequisite, Arabic 318, 462, or consent of the instructor. Not offered in 1966-67.

491-492. SEMINAR IN THE HISTORY OF THE MEDIEVAL ISLAMIC WORLD

Throughout the year. Credit four hours a term. Otherwise qualified undergraduate and graduate students who cannot read Arabic texts may be admitted with the consent of the instructor. Hours to be arranged. Mr. Udovitch.

405. INDEPENDENT STUDY

Either term. Credit two hours. For qualified students. Staff.

406. INDEPENDENT STUDY

Either term. Credit four hours. For qualified students. Staff.

Honors Courses

370. HONORS COURSE

Spring term. Credit four hours. To be taken in the junior year. A program of readings and consultations devoted to an author or topic to be made known in advance of the term.

[371-372. SENIOR HONORS COURSE]

Throughout the year. Credit four hours a term. The first term is prerequisite to the second term. Not offered in 1966-67.

Other Courses

THE LITERATURE OF THE OLD TESTAMENT

(See Comparative Literature 301.)

THE LITERATURE OF POST-EXILIC ISRAEL

(See Comparative Literature 302.)

SOCIOLOGY

Mr. G. F. Streib, Chairman; Messrs. C. Ackerman, L. Churchill, Mrs. Rose K. Goldsen, Messrs. D. P. Hayes, R. Jung, W. W. Lambert, R. Longabaugh, P. G. Marden, R. McGinnis, L. Meltzer, G. C. Myers, J. M. Stycos, N. Tavuchis, 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 MAJOR. For a major in sociology the following courses must be completed: (a) 321, 330, 402, and 441; (b) a course in social psychology at the 300 level or higher; (c) twelve hours of electives at the 300 level or higher, including at least one course at the 400 level; four hours of these electives must be in sociology. Departmentally approved courses in other fields may be elected in consultation with the major adviser.

As a 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 C 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 co-operation 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. He must meet major requirements (a) and (b), and he must also meet requirements (c) by offering the following: one advanced laboratory in social psychology (Sociology 481 or 611 or Psychology 447); and two courses in Psychology or one course in Psychology and one course in Anthropology, to be selected in consultation with the student's major adviser.

SOCIAL RELATIONS MAJOR. 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 equivalent.

(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 program in social relations should apply to the Chairman of the Social Relations Committee, Robin M. Williams Jr.

THE HONORS PROGRAM. For admission to the Honors Program, 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 B— and an average in departmental courses of at least B, or show exceptional promise.

SEMINARS. Seminars may be taken by qualified undergraduates with the consent of the instructor, except as otherwise noted in course listings.

DISTRIBUTION REQUIREMENTS. The Distribution I requirements in Social Sciences is satisfied in sociology by Sociology 101 and an additional semester course at the 200 or 300 level.

PARTICIPATION IN RESEARCH. Participation in sociological research may be required as part of course work for any student when the instructor considers that it will be to the student's educational advantage.

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. Prerequisites, 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.

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 be-

havior 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. Students will be asked to participate in a field study examining opinion on a current issue of public interest.

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 INTERPERSONAL RELATIONS

Fall term. Credit three hours. Prerequisite, Sociology 101 or Child Development 115. M W F 11. Mr. Longabaugh.

The presentation and development of selected theories offered to account for why people relate to one another the way they do. These perspectives are compared and evaluated in terms of their adequacy in accounting for interpersonal relations. Student participations are solicited via class demonstrations, role play techniques, field studies, and participant observations.

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.

332. URBAN COMMUNITIES

Spring term. Credit four hours. Prerequisite, Sociology 101 or consent of the instructor. T Th S 11. Mr. Thompson.

The study of urban aggregates as ecological, social and cultural systems. The structure of urban communities will be studied both from the perspec-

tive of the larger, environing social and cultural system and from the perspective of internal relationships of institutions within the community. Patterns of community power structure and political participation will be examined within this context.

341. SOCIOLOGY OF EDUCATION

Fall 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 social and cultural developments. The structure of educational institutions, both American and foreign, and the interrelationships between educational and other institutions will be studied. Student attitude studies will be reviewed from the perspective of sociology.

343. THE FAMILY

Fall term. Credit four hours. Prerequisite, Sociology 101 or consent of the instructor. M W F 9. Mr. Tavuchis.

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.

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.

A systematic survey of theory and research on social stratification.

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.

An analysis of the constant and variable features of large-scale industrial and pre-industrial societies. 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 10, and a third hour to be arranged. Mr. Ackerman.

Sociological aspects of aberrant youth culture, lower-class gangs, mental illness and political extremism are examined in the context of "action" theory, with special attention given to "anomie," "alienation" and "identity crisis."

362. ECONOMIC DEVELOPMENT AND SOCIAL EVOLUTION

Spring term. Credit four hours. Prerequisite, Sociology 101 or consent of the instructor. M W F 10, and an additional hour to be arranged. Mr. Ackerman.

Applies sociological concepts and theories of change and evolution to the historical development of Western industrial society. Examines such concepts and theories with respect to their relevance to the newly emergent nations. Is intended as a general introduction to "problems of modernization."

363. MASS SOCIETY, POLITICS, AND CULTURE

Spring term. Credit four hours. Prerequisite, Sociology 101 or consent of the instructor. M W F 12, and an additional hour to be arranged.

The nature of "mass" society, its contrast to other forms and its historical development, is examined, with special reference to its consequences for political behavior and youth culture.

381. SOCIAL PSYCHOLOGY

Fall term. Credit four hours. Prerequisites, 3 hours of psychology and 3 hours of sociology. M W F 10.

Analysis of the history, concepts, methods, and theories used to describe and conceptualize the ways in which people react to one another. Students will work in teams on projects utilizing experimental or other empirical methods. The topics for investigation in student projects and in lectures will include such processes as attitude change, communication, interpersonal influence, conformity, leadership, and interpersonal affect.

384. GROUP DYNAMICS

Spring term. Credit four hours. Prerequisites, written permission of the instructor, 3 hours in psychology and 3 hours in sociology. M W F 2, and M 3 or W 3. Mr. Longabaugh.

An analysis of social relations at three levels: (1) the relation of individuals to one another; (2) the relation of individuals to groups; and (3) the nature of groups. 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.

[EXPERIMENTAL SOCIAL PSYCHOLOGY (Psychology 342)]

Not offered in 1966-67.

INTRODUCTION TO PERSONALITY AND SOCIAL PSYCHOLOGY

(Psychology 208)

Spring term. Credit four hours. Prerequisite, a course in psychology. T Th 5 10. Mr. Meltzer.

THEORIES OF PERSONALITY (Psychology 345)

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 productions will be considered. The emphasis will be mainly upon "normal" personality.

LABORATORY STUDY OF INTERPERSONAL INTERACTIONS

(Psychology 447)

Spring term. Credit four hours. Prerequisite Psychology 342, or Sociology 381, or graduate student status, or permission of the instructor. T 2-4 and one additional hour. Mr. Longabaugh.

Topics in the study of interpersonal behavior are reviewed. Selected problems within these topic areas are studied by empirical research. Analyses include laboratory and field researches carried out by the students.

402. SOCIAL THEORY

Spring term. Credit four hours. Open only to graduate students and to undergraduate majors in the social sciences. Permission of the instructor required.

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 3-4:30. 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 and status.

423. ANALYSIS OF QUANTITATIVE 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, quantitative materials from current studies are analyzed by students. Problems of editing, classifying and coding data are dealt with in the laboratory sessions. Students are expected to learn how to use IBM unit record equipment in their analyses. Scales, scores and composite indexes are developed and used in the analyses. Students are expected to write their exercises as weekly research reports, which are annotated by the instructor and discussed in class.

424. ANALYSIS OF QUALITATIVE 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 data.

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.

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. Not offered in 1966-67.

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.

INTRODUCTION TO HUMAN ECOLOGY

Spring term. Credit three hours. (See Planning 713, Architecture.)

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 co-operation 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.

481. EXPERIMENTAL GROUP DYNAMICS

Fall term. Credit four hours. Prerequisites, a course in statistics and a course in social or experimental psychology. Open to upperclassmen and graduate students. Hours to be arranged.

A practicum. Supervised research experience in the design, execution, and analysis of experimental research on topics such as group cohesiveness, group pressures, group goals, leadership, group performance, and interpersonal influence and communication. Students will read and discuss experimental studies as well as pertinent theoretical articles.

491. SELECTED TOPICS IN SOCIOLOGY

Either term. Credit two hours. Open only to majors. Hours to be arranged. Staff.

492. SELECTED TOPICS IN SOCIOLOGY

Either 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. Myers and Staff.

494. HONORS SEMINAR

Spring term. Credit four hours. Prerequisite, acceptance as candidate for Honors. Hours to be arranged. Mr. Myers 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. Not offered in 1966-67.

512. HISTORY OF SOCIOLOGICAL THEORY

Spring term. Credit four hours. Open to majors and graduate students. T Th 2-3:30.

513. DEMOGRAPHIC THEORY

Fall term. Credit four hours. Open to majors and graduate students. T 4-6.
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 1966-67.

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.

Finite probability theory is reviewed. Recurrent events, stationary Markov chains and dynamic Markov processes are evaluated as models of social organization and change.

[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. Not offered in 1966-67.

530. INTRODUCTION TO DEMOGRAPHY

Spring term. Credit four hours. Primarily for graduate students. Undergraduates must secure the consent of the instructor. T Th 2-3:30. Mr. Marden.

A survey of the methods, theories, and problems of contemporary demography.

541. SOCIAL ORGANIZATION AND CHANGE

Fall term. Credit four hours. T Th 2-3:30. Mr. Williams.

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.

Critical analysis of the major current perspectives in social psychology.

PROSEMINAR IN SOCIAL PSYCHOLOGY (Psychology 571-572)

611. SEMINAR: THEORY AND RESEARCH IN SOCIAL PSYCHOLOGY

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 Latin American demography.

[613. SEMINAR: THEORY AND RESEARCH]

Fall term. Credit four hours. W 2-4. Mr. Williams. Not offered in 1966-67.

614. SEMINAR: THEORY AND RESEARCH

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

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.

618. SEMINAR: THEORY AND RESEARCH

Spring term. Credit four hours.

619. SEMINAR: THEORY AND RESEARCH

Fall term. Credit four hours. Th 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.

661. SEMINAR: SOCIAL SYSTEMS ANALYSIS

Fall term. Credit four hours. Hours to be arranged. Messrs. Ackerman and Williams.

Concepts and theories.

662. SEMINAR: SOCIAL SYSTEMS ANALYSIS

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

Foundations of systems analysis.

663. SEMINAR: SOCIAL SYSTEMS ANALYSIS

Fall term. Credit four hours. Hours to be arranged. Mr. Jung.

Foundations of social systems analysis.

664. SEMINAR: SOCIAL SYSTEMS ANALYSIS

Spring term. Credit four hours. Hours to be arranged. Mr. McGinnis and staff.

Advanced treatment of selected topics.

682. SEMINAR IN SOCIAL PSYCHOLOGY

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

SPEECH AND DRAMA

Mr. H. D. Albright, Chairman; Messrs. J. P. Bakke, G. E. Beck, M. A. Carlson, Miss Ruth Anne Clark, Miss Anne Gibson, Messrs. 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 courses: either 107-108 or 109-110, plus 235, 400, and one course outside his own area of emphasis. 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 B- for all work done in the College, and have no grades below B- for courses in speech and drama.

The Distribution I requirement in the Expressive Arts is satisfied in speech and drama by Speech and Drama 107-108; 109-110; or 201 plus either 202 or 205.

For satisfaction of Distribution II requirements, the Department suggests as representative the following paired or sequential courses: 273-373, 283-285, 285 and 385 or 386, 303-304, 375-376, any two of 393, 394, or 396, 401 and either 402 or one of 411, 412. Representative four-course combinations are: 273-373 and two of 393, 394, 396, 283-285-381 and 385 or 386, 303-304-401 and one of 402, 411, 412, 413.

For those planning to teach English the Department recommends Courses 235, 281, 283, 285, 303.

107-108. INTRODUCTION TO SPEECH

Throughout the year. Credit three hours a term. First term prerequisite to the second. M W F 11. Messrs. Wilson and Bakke.

An introduction to the utilitarian art of oral communication through study of theory and its application in performance. The first term is devoted to speaking projects, each related to specific principles governing the projection of rhetorical meaning and to exploration of problems of audience analysis, discovery and arrangement of ideas, language choice, and delivery.

The second term is a consideration of the limitations and potentialities of speech. The student examines how and why man speaks; physiological, psychological, and semantic aspects of the speech act; and forms of communication.

Intended primarily for students in the College of Arts and Sciences. Not open to students who have taken Speech and Drama 201.

109-110. INTRODUCTION TO THEATRE ART

Throughout the year. Credit three hours a term. First term prerequisite to the second. M W F 12. Messrs. Carlson and Albright.

Study of the fundamental elements in theatrical production and of their inter-relationships. The first term will be devoted primarily to the written script and its analysis for production, and to staging and design as they affect the work of actor and director.

The second term will consider primarily the artistic choices of the actor and director in bringing a script to life on the stage. Material in both terms will be developed through lectures, readings, discussions, and demonstrations, as well as through individual and group exercises.

Intended primarily for students in the College of Arts and Sciences. Not open to students who have taken Speech and Drama 283.

121-122. WRITTEN AND SPOKEN RHETORIC

Throughout the year. Credit three hours a term. T Th S 9. Messrs. Wilson and Bakke.

A course in written and spoken rhetoric designed to improve the student's ability to invent, organize, and express his ideas in expository and persuasive discourse. Some attention to differences between spoken and written style. The second term includes critical analysis of distinguished essays and great speeches. Outlines, themes, and critical papers required. Fulfills the Freshman Humanities requirement.

123. FRESHMAN COURSE: THE ARTS OF THE THEATRE

Fall term. Credit three hours. T Th S 10 or 11. Mr. Carlson.

A survey of the elements of dramatic expression intended to develop appreciation and rational enjoyment of the theatre in all its forms. The course will stress development of writing skills, and a series of outlines and critical papers will be required. Fulfills the Freshman Humanities requirement.

125. FRESHMAN COURSE: THE PUBLIC ARTS

Spring term. Credit three hours. T Th S 10 or 11. Mr. Robertson.

A consideration of the three principal theatre-related arts, film, radio, and television: their origins; their history; their methods of entertainment and instruction; their position in the American culture. The course will stress development of writing skills; and frequent reports, as well as a final research paper, will be required. Fulfills the college writing requirements.

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.

400. FORM AND IDEA IN RHETORIC AND DRAMATIC ART

Spring term. Credit four hours. Hours to be arranged. Messrs. Albright and Wilson.

Rhetoric and dramatic art studied from their common base in public oral communication: their similarities, differences, and limitations. Readings in texts from Plato and Aristotle to the present; and in representative speeches and plays.

Speech

PRIZES. 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.

201. PUBLIC SPEAKING

Either term. Credit three hours. Not open to students who have taken Speech and Drama 103 or 107. 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 1, and Tuesday, March 16.

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.

202. PERSUASION

Spring term. Credit three hours. Prerequisite, Speech and Drama 107 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 purposed, audiences, and propositions.

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

Throughout the year. 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.

235. PHONETICS AND SPEECH TRAINING

Fall term. Credit three hours. Hours to be arranged. Mr. Albright.

An elementary approach to the physiology and acoustics of speech, with some attention to common types of speech disorders. Identification, produc-

tion, and general analysis of the sounds of American English, using the International Phonetic Alphabet.

303. ARGUMENT

Either term. Credit four hours. Open to upperclassmen and to underclassmen who have taken Speech and Drama 103, 105, 107, or 201. M W F 9.

Study of the principles 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.

304. SYSTEMS OF ARGUMENT

Spring term. Credit four hours. W F 2 and an hour to be arranged. Mr. Bakke.

Intensive study of argument as a means of inquiry and persuasion in rhetorical and dialectical discourse. Exploration of fundamental inference patterns, related to such contemporary forms of speech as oratory, discussion, and debate. Readings in Aristotle, Cicero, Kant, Whately, Mill, Dewey, Toulmin, Johnstone, Ehninger, and others. Not a performance course. Lectures, reports, papers.

[345. BASES OF SPEECH BEHAVIOR]

Not offered in 1966-67.

401. FORMS AND STYLES OF PUBLIC ADDRESS

Fall term. Credit four hours. T Th 11 and an hour to be arranged. 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. T Th 11, and an hour to be arranged. Miss Clark.

Study of implications, for persuasive discourse, of current theories on the nature of attitudes and attitude change. Topics considered will include persuasive paradigms, research relevant to selection of persuasive appeals and arguments, and the ethics of persuasion. Lectures, readings, and research reports.

411. AMERICAN PUBLIC ADDRESS

Spring term. Credit four hours. M W F 12. Mr. Wilson.

Critical and analytical study of American speeches as influences upon, and reflections of, our national history. Speeches to be studied will relate to such events as ratification of the Constitution, the Civil War, reconstruction, imperialism, the League of Nations, and World War II. Representative of orators considered are: Webster, Lincoln, Bryan, Wilson, and Franklin D. Roosevelt.

412. BRITISH PUBLIC ADDRESS

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

Analytic study of parliamentary and public speeches reflecting the evolution of British rhetorical practice. Speeches to be studied will relate to such movements as the American and French revolutions, Indian reform, parlia-

mentary reform, free trade, imperialism, and World War II. Representative of the orators considered are: Cromwell, Chatham, Burke, Cobden, Gladstone, and Churchill.

[413. CONTEMPORARY PUBLIC ADDRESS]

Not offered in 1966-67.

501-502. SEMINAR IN RHETORICAL THEORY

Throughout the year. Credit four hours a term. M 2-4:30.

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 by consent of 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.

Drama

PRIZES. 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.

Each of the following three courses (261-262, 263-264, and 265-266) is offered throughout the year. Credit one hour a term. Consent of the instructor is required. The courses may be repeated for credit, but no student may earn more than six hours of credit applicable towards graduation. Acting, directorial, 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 the program is also open to students without credit.

261-262. 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.

263-264. MANAGEMENT AND DIRECTION

Hours to be arranged. First meeting in Lincoln B-9 at 7:30 P.M. on first day of instruction.

265-266. TECHNICAL THEATRE

Hours to be arranged. First meeting in Lincoln B-9 at 7:30 P.M. on first day of instruction. Miss Gibson.

[271. THE ARTS OF THE THEATRE]

Not offered in 1966-67.

[273. THE PUBLIC ARTS: FILM, RADIO, AND TELEVISION]

Not offered in 1966-67.

[281. ORAL INTERPRETATION OF LITERATURE]

Not offered in 1966-67.

283. ACTING

Fall term. Credit three hours. Not open to students who have taken Speech and Drama 104 or 110. 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.

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. SURVEY OF THEATRICAL THEORY]

Not offered in 1966-67.

375. THE HISTORY OF THE MOTION PICTURE

Fall term. Credit four hours. T Th 11. Laboratory, T 2-4:30. Mr. Beck.

An introduction of 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. Lectures, discussions, and reports.

376. THE DOCUMENTARY AND EXPERIMENTAL FILM

Spring term. Credit four hours. T Th 11. Laboratory, T 2-4:30. Mr. Beck.

An examination of the non-fiction film and the experimental film. Attention is given to the film maker as artist, informant, propagandist, and recorder. Representative examples of film essays, American and foreign, will be studied. Lectures, demonstrations, discussions, and reports.

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 struc-

ture 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, 110, 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

Spring term. Credit four hours. Prerequisite, Speech and Drama 285 or consent of instructor. W 2-4:30.

Readings, reports, and exercises; assignments in the direction and production of plays in the Studio program.

[386. ADVANCED ACTING]

Not offered in 1966-67.

388. PLAYWRITING

Fall term. Credit four hours. Previous study in play production recommended. F 2-4:30. Mr. Robertson.

A consideration of the art and craft of writing for the theatre; practice through the composition and testing of one-act plays.

393. HISTORY OF THE THEATRE I

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

A survey of the characteristics of primitive theatre, and of theatrical styles and production modes in classic Greece, Rome, China, and India, medieval Europe, and renaissance England and Spain. Readings, lectures, and reports.

394. HISTORY OF THE THEATRE II

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

A survey of theatrical styles and production modes in Europe and the Orient since 1642. Among the areas considered will be Renaissance France, the English Restoration, the eighteenth and nineteenth centuries in England, France, Germany, and Japan, and the modern international stage. Readings, lectures, and reports.

396. AMERICAN DRAMA AND THEATRE

Spring term. Credit four hours. T Th S 9. 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 an expression of the national life and culture.

[491. SEMINAR IN THEATRE HISTORY]

Not offered in 1966-67.

242 INTERDEPARTMENTAL COURSES

493. SEMINAR IN THE FILM

Spring term. Credit four hours. Prerequisite, Speech and Drama 375 or 376, or consent of the instructor. Th 2-4:30. Mr. Beck.

Selected topics in the history and aesthetic of the film.

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]

Not offered in 1966-67.

595. SEMINAR IN THEATRE AESTHETICS

Spring term. Credit four hours. Prerequisite, Speech and Drama 495 or consent of the instructor. T 2-4:30. Mr. Carlson.

Selected topics in theatre aesthetics.

[597. SEMINAR IN THEATRE CRITICISM]

Not offered in 1966-67.

690. THESES AND SPECIAL PROBLEMS IN DRAMA AND THE THEATRE

Either term. Credit and hours to be arranged. Messrs. Albright, Carlson, and Beck.

Open to graduate candidates working on theses and to other graduates prepared for independent study of special topics in drama and theatre.

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

BRAIN MECHANISMS AND MODELS

Formerly Course 301-302; is now Biological Sciences 521-522.

404A-404B. COMPUTER METHODS IN BEHAVIORAL SCIENCES

Fall term. (Will be repeated in spring term if demand warrants.) These two courses together form a one-semester sequence carrying two hours of credit.

Either part may be taken separately for one credit but must be registered for at the beginning of the term. Lectures T Th 9. Laboratory W 4-6. Mr. Burrill.

Course 404A will include the subject of card-handling machines and the Cornell Statistics System (CUSTAT). Course 404B will be an introduction to 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 432, 532; Economics 325, 565; History 319-320, 487, 488, 687-688; Industrial and Labor Relations (ILR) 533, 534; Rural Sociology (Agr.) 414; Sociology 612; Spanish 306, 311-312, 329, 353-354, 461-462, 463, 464, 465-466, 467-468, 501-502, 533, 588.

SEMINAR: LATIN AMERICAN STUDIES 602

Spring term. Credit four hours. Hours to be arranged. (Staff)

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.

THE SIX-YEAR PH.D. PROGRAM

Limited to forty students a year, this program leads to the A.B. degree in three years, the M.A. in four, and the Ph.D. in six. It is designed for superior students who are bound for advanced study in the liberal arts or sciences. All students admitted to it will be given financial aid based on need, renewable for their three undergraduate years (so long as their performance is satisfactory). For each of their three graduate years, provided that they meet graduate-school standards, they will be awarded fellowships worth \$3000 plus tuition and fees.

The Six-Year Ph.D. Program is designed for the exceptionally able, committed student who is likely to find undergraduate routines confining and the pace of the regular A.B. course too slack. Students of this sort, to avoid the let-down that can follow the transition from school to college, sometimes accelerate on their own power, at the cost either of early, narrow specialization, or of shallow grounding for graduate work. For these students and others, the Six-Year Ph.D. Program balances acceleration with enrichment, providing an integrated course of study with a strong liberal-arts core. By making undergraduate study continuous with study for the graduate degrees, the program also reduces the waste that can follow the unsettling transition to graduate work, and shortens the long, disheartening apprenticeship that graduate life too commonly involves.

Students accepted for the program will be brought to Cornell for a preliminary summer session of six weeks (with room, board, and travel paid) following their school graduation. Work in the summer will be

divided between a small seminar in a special topic, designed to introduce students to college study, and intensive work in languages. For the summer of 1966 the seminars, each limited to 15 members, are:

SEMINAR IN ANTHROPOLOGY

Afternoons. Credit four hours. Assistant Professor Arthur Wolf, Department of Anthropology.

SEMINAR IN COMPARATIVE LITERATURE

Afternoons. Credit four hours. Associate Professor Edgar Rosenberg, Department of English.

SEMINAR IN MATHEMATICS

Afternoons. Credit four hours. Visiting Professor Wolfgang Rindler, Department of Mathematics, Southwest Institute for Advanced Study.

Special language courses will be offered in French, German, and Russian at both beginning and advanced levels, and other languages may be available in the regular Summer Session.

In later summers, students who have special needs may be supported in research under the guidance of faculty members at Cornell or in travel and study abroad. Summer work will not be looked upon as a way to accelerate more rapidly (to reach the total of 120 hours needed for graduation, each student need earn only 10 hours of advanced standing credit) but as a way to enrich and fill out a student's education.

During their first year in the program, all students will be expected to be able to read two foreign languages (French and German are the most useful, with Latin, Greek, and Italian of special importance for the humanities, and Russian of growing importance in the sciences). The seminars will take this competence for granted. Students who fall short of these expectations may use the first summer to develop (or even to begin) their language. All students will also be expected to have an acquaintance with the differential calculus, not simply as a tool but as one of the great intellectual achievements of the Western world. Again, the first summer may be used to gain or improve this acquaintance. All students will further be expected to know the subtlety and power of the English language and to use it well.

During their three undergraduate years students in the program will be freed of formal requirements. They need not even designate a major. Each student will be expected to work out, by consultation with his adviser, an individual program of study that suits his needs and leads him into graduate study in his chosen field. All students are expected to take one of the special seminars each year, and three other courses each term chosen from the regular college offerings. In the first year this will ordinarily represent a load of 15 hours per term; in later years, 18 hours per term.

The seminars are intended to provide a center for the student's general education, and to introduce him to areas in which his special interests may develop. The courses will serve a variety of aims, among them that of giving training in depth in the subjects of students' special interests. The seminars are of different kinds. Some are broad in scope,

some rather sharply focused upon special problems. Some are more advanced than others and may require special background, but all are open to any student in the program, at any level. All seminars will demand sustained independent work and clear, accurate writing.

Seminars in 1966-67 will be as follows (each student in the program will enroll in one, and regular students in the College may also apply for admission, up to the limit of 15 participants):

SEMINAR IN ANTHROPOLOGY

Throughout the year. Credit six hours per term. Hours to be arranged. Charles F. Hockett, Professor of Linguistics and Anthropology. Topic: Man's Place in Nature.

A survey of what is known and what is suspected, from the scientific point of view, of man's nature and his place in the universe. Human communities and their lifeways; norms and extremes; similarities to and differences from the ways of life of other animals. The nature of language and its function in human life. The nature of our knowledge of the past. How language and culture change with the passage of time. The principal steps and stages of human evolution (genetic and cultural) from proto-Hominoid times to the present.

SEMINAR IN HISTORY AND LITERATURE

Throughout the year. Credit six hours per term. Hours to be arranged. O. J. M. Jolles, Professor of German Literature and Chairman, Department of German. Topic: "Concepts of Man" from 1750 to the present.

The seminar will investigate the various premises underlying the writing of historians, and of philosophical or literary documents which deal with history. Such topics as historical progress, historical relativism, history as a science or as literature, the role of great men, etc., will be discussed. The texts will include works by such writers as Voltaire, Herder, Kant, Ranke, Hegel, Taine, Buckle, Marx, Spengler, Toynbee, and others. Suggested readings: Hans Meyerhoff, *The Philosophy of History in Our Time*; Fritz Stern, *The Varieties of History*; and Pieter Geyl, *Debates with Historians*.

SEMINAR IN PHYSICAL SCIENCE

Throughout the year. Credit six hours per term. Hours to be arranged. Andreas Albrecht, Professor of Chemistry. Topic: Some Fundamental Concepts of Physical Science.

This seminar will explore past and present thinking on some of the powerful ideas in modern science: fundamental particles, observables and the indeterminacy principle, energy and its conservation, entropy and criteria for spontaneous change, molecular averages and assembly properties, symmetry in space and time. Discussions will be based on writings by Max Born, Erwin Schroedinger, J. Willard Gibbs, G. N. Lewis, P. Ehrenfest, Louis de Broglie, et al.

SEMINAR IN PHILOSOPHY AND LITERATURE

Throughout the year. Credit six hours per term. Hours to be arranged. Stuart Brown, Professor of Philosophy, and Dean, College of Arts and Sciences. Topic: The Bloomsbury Group.

The seminar will be a study of the writings and the influence of a group of friends, formed about a nucleus of young men who had been students together at Cambridge at the turn of the twentieth century. Most had come strongly under the influence of G. E. Moore, a young philosopher and don;

all were passionately devoted to art and truth. Among the members of the group were the novelists, E. M. Forster and Virginia Woolf; the historian and biographer, Lytton Strachey; the economist, J. M. Keynes; the novelist and political scientist, Leonard Woolf; and the art critics, Clive Bell and Roger Fry. Special attention will be given to the philosophy of G. E. Moore.

In 1967-68 four new seminars will be added to the four above:

SEMINAR IN MATHEMATICS

Throughout the year. Credit six hours per term. Hours to be arranged. Peter Hilton, Professor of Mathematics. Topic: The Art and Science of Mathematics.

The objective in this seminar is to present basic notions of mathematics within the framework of a study of the development of mathematics. The following topics will receive attention: differential and integral calculus; elementary number theory; group theory; foundations of geometry; linear algebra; elementary theory of differential equations. The approach will be designed to show why the fundamental concepts of mathematics arise and why they survive; this approach will bring out the criteria of generality and applicability but will not preclude the acquisition, by those attending the seminar, of good and efficient technique. Suggested readings: Courant and Robbins, *What is Mathematics?*; Klein, *Elementary Mathematics from an Advanced Standpoint*; Davenport, *The Higher Arithmetic*; Hardy, *A Mathematician's Apology*; Birkhoff and MacLane, *Survey of Modern Algebra*.

SEMINAR IN BIOLOGICAL SCIENCE

Throughout the year. Credit six hours per term. Hours to be arranged. Topic: to be announced.

SEMINAR IN ASIAN STUDIES

Throughout the year. Credit six hours per term. Hours to be arranged. Robert J. Smith, Professor of Anthropology and Chairman of Asian Studies. Topic: to be announced.

SEMINAR IN THE HISTORY OF IDEAS

Throughout the year. Credit six hours per term. Hours to be arranged. Cushing Strout, Professor of English, and Member, American Studies Committee. Topic: Dimensions of Freedom.

An examination of the multiple meanings and problems of freedom in American culture. Selection of texts will emphasize classic themes and spokesmen in a variety of forms: histories, theories, cases, fiction. The issues centering around the ideal of freedom will be topically studied in historical context, and analysis will be made of such different dimensions as free will and determinism, majority rule and minority rights, church and state, individualism and conformity, alienation and community. Texts will include de Tocqueville's *Democracy in America*, Reisman's *The Lonely Crowd*, and *The Federalist*; essays by Edwards, Emerson, Thoreau, and James; novels by Twain, James, Dos Passos, Bellow, and Ellison; and famous cases like the Scopes trial, Sacco-Vanzetti, and the Oppenheimer security hearing.

In 1968-69 four additional seminars will bring the total to twelve.

The director of each seminar will serve as adviser to ten or twelve students in the program, consulting closely and frequently with them, helping them to select courses, and guiding them ultimately in their choices of a field and a director for their graduate work.

Candidates for the program need not have decided upon their major subject, but they should feel a strong commitment to advanced study in the liberal arts or sciences. To apply, they should file the regular application for admission to the College of Arts and Sciences and at the same time ask for a copy of the *Application for Cornell Six-Year Ph.D. Program*. Both applications must be turned in by the middle of January. So that scores will be available early, all candidates are urged to take the College Board Scholastic Aptitude Test in December. Three College Board Achievement Tests are also required: English composition, a foreign language, and either a second language, mathematics, or a subject which is likely to be the student's major interest in college. All candidates are further urged to submit scores of the PSAT and achievement tests taken in their junior year.

Candidates who pass the first screening of applications will be interviewed by a member of the program staff.

While the program is an integrated six-year design, it is not meant to be binding or inflexible. Students whose needs appear to be better served outside the program, or who desire from one motive or another to leave it, may transfer to the regular Cornell curricula. Their places will be filled by qualified students from the College of Arts and Sciences. To apply, students already at Cornell should see the Director of the program, Dean S. M. Parrish, College of Arts and Sciences, Goldwin Smith Hall.

Freshman Seminars

Supported by the Six-Year Ph.D. Program, each seminar is open to twelve selected freshmen not in the program. Application may be made on blanks obtainable in Goldwin Smith 142. Final selection of candidates will be made at the beginning of the spring term.

In the spring term of 1966, the following seminars are offered:

FRESHMAN SEMINAR IN THE MIDDLE AGES

Spring term. Prerequisite: a reading knowledge of Latin, French, or Italian. Credit four hours. John Freccero, Professor of Italian. Topic: Confessional Writings and the Origins of the Novel.

FRESHMAN SEMINAR IN MATHEMATICS

Spring term. Credit four hours. Peter Hilton, Professor of Mathematics. Topic: The Art and Science of Mathematics.

In the spring of 1967, the seminars will be:

FRESHMAN SEMINAR IN LITERATURE

Credit four hours. Topic: to be announced.

FRESHMAN SEMINAR IN MATHEMATICS

Credit four hours. Wolfgang Fuchs, Professor of Mathematics. Topic: to be announced.

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

1966-67*

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
Stephen M. Parrish, Associate Dean of College of Arts and Sciences
F. Dana Payne, Jr., Associate Dean of the College of Arts and Sciences
Alexander J. Cheney, Assistant 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
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, Emeritus
Frederick Browning Agard, Ph.D., Professor of Linguistics
Ralph Palmer Agnew, Ph.D., D.Sc., Professor of Mathematics
Andreas C. Albrecht, Ph.D., Professor of Chemistry
H. Darks Albright, Ph.D., Professor of Speech and Drama
Alan Anthony Altschuler, Ph.D., Assistant Professor of Government
Vinay Ambegaokar, Ph.D., Associate Professor of Physics
Archie Randolph Ammons, B.S., Assistant Professor of English
John Maxwell Anderson, Ph.D., Professor of Zoology, Section on Genetics, Development, and Physiology, Division of Biological Sciences
Judith Helena Anderson, Ph.D., Assistant Professor of English
Moshe Anisfeld, Ph.D., Assistant Professor of Psychology
Douglas Nelson Archibald, M.A., Instructor in English
Robert Ascher, Ph.D., Professor of Anthropology and Archaeology³
Neil William Ashcroft, Ph.D., Assistant Professor of Physics
William Weaver Austin, Ph.D., Professor of Music
James Burton Ax, Ph.D., Associate Professor of Mathematics
William Ian Axford, Ph.D., Professor of Astronomy
John Paul Bakke, M.A., Assistant Professor of Speech and Drama
Michael Slavo Balch, Ph.D., Assistant Professor of Mathematics
Cesáreo Bandera-Gómez, M.A., Assistant Professor of Romance Studies³

* Numbers following names indicate: (1) leave of absence, fall term, 1966-67; (2) leave of absence, spring term, 1966-67; (3) leave of absence, 1966-67. This listing of the faculty of the College of Arts and Sciences does not necessarily include all appointments or resignations for 1966-67.

- Harlan Parker Banks, Ph.D., Professor of Botany
 Dietger Bansberg, Lecturer in German
 Evelyn Barish, Ph.D., Assistant Professor of English
 LeRoy Leshner Barnes, Ph.D., Professor of Biophysics ²
 Simon H. Bauer, Ph.D., Professor of Chemistry
 Gordon E. Beck, Ph.D., Assistant Professor of Speech and Drama
 Jonathan Mock Beck, M.A., Assistant Professor of Mathematics ³
 Jonathan Francis Bennett, M.A., Visiting Associate Professor of Philosophy
 Anne LeGrace Benson, M.F.A., Lecturer in the History of Art
 Jacques Béreaud, Doctorat D'Université, Assistant Professor of Romance
 Studies
 Karl Berkelman, Ph.D., Associate Professor of Physics
 Sylvester E. Berki, M.A., Acting Assistant Professor of Economics
 Leonard Berkowitz, Ph.D., Professor of Psychology
 Harley Bernbach, M.S., Assistant Professor of Psychology ³
 Walter F. Berns, Jr., Ph.D., Professor of Government
 Jerome Bernstein, Ph.D., Assistant Professor of Spanish-American Literature
 Israel Berstein, Ph.D., Associate Professor of Mathematics ³
 Hans Albrecht Bethe, Ph.D., John Wendell Anderson Professor of Physics
 Vincent Michael Bevilacqua, Ph.D., Assistant Professor of Speech and Drama
 Gian-Paolo Biasin, Ph.D., Assistant Professor of Romance Studies
 Knight Biggerstaff, Ph.D., Professor of Chinese History
 Jonathan Peale Bishop, Ph.D., Associate Professor of English
 Morris Gilbert Bishop, Ph.D., Kappa Alpha Professor of Romance Literature,
 Emeritus
 Vilhjalmur T. Bjarnar, M.A., Lecturer in Germanic Linguistics
 Max Black, Ph.D., D. Lit., Susan Linn Sage Professor of Philosophy
 Eric Albert Blackall, M.A., Dr. Phil., Litt.D., Avalon Foundation Professor
 in the Humanities
 Jean Frantz Blackall, Ph.D., Lecturer in English
 Antonie William Charles Blackler, Ph.D., Associate Professor of Zoology,
 Section of Genetics, Development, and Physiology, Division of Biological
 Sciences
 Alfred Theodore Blomquist, Ph.D., Professor of Chemistry
 Allan David Bloom, Ph.D., Associate Professor of Government
 Arthur L. Bloom, Ph.D., Associate Professor of Geological Sciences ²
 Nicholas C. Bodman, Ph.D., Professor of Linguistics
 Albert Wilhelm Boesche, Ph.D., Professor of German, Emeritus
 Raymond Bowers, Ph.D., Professor of Physics
 Baird H. Brandow, Ph.D., Instructor in Physics
 Dalai Brenes, Ph.D., Professor of Romance Studies
 Herbert Whittaker Briggs, Ph.D., Goldwin Smith Professor of International
 Law
 Gabriel John Brogyanyi, M.A., Instructor in Romance Studies
 Urie Bronfenbrenner, Ph.D., Professor of Psychology
 Andrew Arnold Browman, Ph.D., Instructor in Physics
 Stanley Gordon Brown, M.S., Instructor in Physics
 Stuart MacDonald Brown, Jr., Ph.D., Professor of Philosophy
 Sanford Budick, M.A., Instructor in English
 Alan Newton Bunner, M.S., Instructor in Physics

- James M. Burlitch, Ph.D., Assistant Professor of Chemistry
 Edwin Arthur Burt, S.T.M., Ph.D., L.H.D., Susan Linn Sage Professor of
 Philosophy, Emeritus
 Richard A. Caldwell, Ph.D., Assistant Professor of Chemistry
 Robert Gilmore Calkins, M.A., Assistant Professor of the History of Art
 William A. Campbell, M.A., Professor of Music
 John Vincent Canfield, Ph.D., Assistant Professor of Philosophy³
 Harry Caplan, Ph.D., Goldwin Smith Professor of the Classical Languages and
 Literatures
 Anthony Caputi, Ph.D., Associate Professor of English
 Patricia J. Carden, M.A., Assistant Professor of Russian Literature
 Marvin Albert Carlson, Ph.D., Assistant Professor of Speech and Drama
 Peter Ambler Carruthers, Ph.D., Associate Professor of Physics
 Barry Michael Casper, Ph.D., Instructor in Physics
 David Giske Cassel, Ph.D., Assistant Professor of Physics
 Jan Michael Chaiken, B.S., Instructor in Mathematics
 Stephen Urban Chase, Ph.D., Associate Professor of Mathematics³
 Nai-Ruenn Chen, Ph.D., Assistant Professor of Economics
 Geoffrey V. Chester, Ph.D., Professor of Physics
 Alpha Chiang, Ph.D., Visiting Professor of Economics
 Fu-Chung Chin, B.A., Instructor in Chinese
 Lindsey Churchill, Ph.D., Associate Professor of Sociology
 M. Gardner Clark, Ph.D., Professor of Industrial and Labor Relations
 Ruth Anne Clark, Ph.D., Assistant Professor of Speech and Drama
 Robert Theodore Clausen, Ph.D., Professor of Botany
 Robert Craig Coburn, Ph.D., Visiting Associate Professor of Philosophy
 Michael J. Colacurcio, Ph.D., Assistant Professor of English
 Alice Mary Colby, Ph.D., Associate Professor of Romance Studies
 LaMont C. Cole, Ph.D., Professor of Zoology, Section of Ecology and Sys-
 tematics, Division of Biological Sciences
 W. Storrs Cole, Ph.D., Professor of Geological Sciences²
 David Connor, M.A., Instructor in German Literature
 William Donald Cooke, Ph.D., Professor of Chemistry
 Morris Albert Copeland, Ph.D., Robert Julius Thorne Professor of Economics,
 Emeritus
 Dale Raymond Corson, Ph.D., Professor of Physics
 Robert Milo Cotts, Ph.D., Associate Professor of Physics
 J Milton Cowan, Ph.D., Professor of Linguistics
 Marianne Ursula Cowan, Ph.D., Visiting Assistant Professor of German Litera-
 ture
 George Ferris Cronkhite, Ph.D., Lecturer in English
 G. Watts Cunningham, Ph.D., Litt.D., Susan Linn Sage Professor of Philos-
 ophy, Emeritus
 Robert E. Cushman, Ph.D., Litt. D., Goldwin Smith Professor of Government,
 Emeritus
 Joseph B. Dallett, Ph.D., Assistant Professor of German Literature
 Richard B. Darlington, Ph.D., Assistant Professor of Psychology
 David Brion Davis, Ph.D., Ernest I. White Professor of American History³
 Tom Edward Davis, Ph.D., Associate Professor of Economics
 Peter J. W. Debye, Ph.D., Todd Professor of Chemistry, Emeritus

- Herbert Deinert, Ph.D., Associate Professor of German Literature
 Phillip Howard DeLacy, Ph.D., Professor of the Classics
 Vincent Arthur De Luca, M.A., Instructor in English
 John Paul Delvaille, Ph.D., Assistant Professor of Physics
 Paul Michael deMan, Ph.D., Professor of Comparative Literature
 Jean-Jacques Demorest, Ph.D., Professor of Romance Studies
 John William DeWire, Ph.D., Professor of Physics
 Herbert Dieckmann, Ph.D., Professor of French and Comparative Literature
 William C. Dilger, Ph.D., Associate Professor of Ethology, Section of Neuro-
 biology and Behavior, Division of Biological Sciences
 Floyd R. Dill, B.S., Assistant Professor of Economics
 Keith Sedgwick Donnellan, Ph.D., Associate Professor of Philosophy
 Archie Thompson Dotson, Ph.D., Associate Professor of Government
 Douglas Fitzgerald Dowd, Ph.D., Professor of Economics³
 Charlotte Lackner Doyle, M.A., Assistant Professor of Psychology
 Frank D. Drake, Ph.D., Professor of Astronomy
 Clifford John Earle, Ph.D., Associate Professor of Mathematics
 Charles L. Eastlack, Ph.D., Assistant Professor of Linguistics
 John Minor Echols, Ph.D., Professor of Linguistics
 Donald D. Eddy, M.A., Assistant Professor of English
 Donald Andrew Edwards, Ph.D., Associate Professor of Physics
 James Eells, Jr., Ph.D., Professor of Mathematics³
 Gert Hans Uve Eilenberger, Dr. rer. nat., Instructor in Physics
 Mario Einaudi, Dr. Jur., Walter S. Carpenter, Jr., Professor of International
 and Comparative Politics
 Robert Henry Elias, Ph.D., Professor of English
 Scott Bowen Elledge, Ph.D., Professor of English
 Donald English, M.B.A., Professor of Economics, Emeritus
 Wilmoth Duane Evans, B.Sc., Professor of Economics
 Gordon Hubert Fairbanks, Ph.D., Professor of Linguistics
 William Guignard Faris, Ph.D., Assistant Professor of Mathematics¹
 Roger Hamlin Farrell, Ph.D., Associate Professor of Mathematics
 Robert Clinton Fay, Ph.D., Assistant Professor of Chemistry
 John C. H. Fei, Ph.D., Professor of Economics
 Francis George Fike, Jr., Ph.D., Assistant Professor of English
 John Alban Finch, Ph.D., Assistant Professor of English
 Daniel Henry Finlay, M.A., Instructor in English
 Patrick C. Fischer, Ph.D., Associate Professor of Computer Science
 Michael E. Fisher, Ph.D., Professor of Chemistry
 Douglas Beach Fitchen, Ph.D., Associate Professor of Physics
 Heywood Fleisig, M.A., Assistant Professor of Economics
 Else M. Fleissner, Ph.D., Visiting Professor of German Literature
 Ephim Gregory Fogel, Ph.D., Professor of English
 Frederick A. Foos, B.A., Assistant Professor of Linguistics
 Edward Whiting Fox, Ph.D., Professor of History
 Kenneth Chester Frederick, Ph.D., Assistant Professor of English
 Jack Freed, Ph.D., Assistant Professor of Chemistry
 Frank Samuel Freedman, Ed. D., Professor of Psychology, Emeritus
 Walter Hoyt French, Ph.D., Professor of English, Emeritus
 Bernard Harper Friedman, B.A., Instructor in English

- Wolfgang H. J. Fuchs, Ph.D., Professor of Mathematics
 James Wells Gair, Ph.D., Assistant Professor of Linguistics
 Paul Wallace Gates, Ph.D., John Stambaugh Professor of History
 Hillel Halkin Gershenson, Ph.D., Assistant Professor of Mathematics³
 David Henry Geske, Ph.D., Professor of Chemistry³
 Roswell Clifton Gibbs, Ph.D., Professor of Physics, Emeritus
 George Gibian, Ph.D., Professor of Russian Literature
 Anne A. Gibson, M.F.A., Instructor in Speech and Drama
 James Jerome Gibson, Ph.D., Professor of Psychology
 Quentin H. Gibson, Ph.D., D. Sc., Professor of Biochemistry, Section of
 Biochemistry and Molecular Biology, Division of Biological Sciences
 Perry Webster Gilbert, Ph.D., Professor of Zoology, Section of Neurobiology
 and Behavior, Division of Biological Sciences
 Antonia Glasse, M.A., Instructor in Russian Literature
 Frank Hindman Golay, Ph.D., Professor of Economics
 Thomas Gold, M.A., Professor of Astronomy
 Bruce Charles Goldberg, Ph.D., Assistant Professor of Philosophy
 Hyman Goldberg, Ph.D., Instructor in Physics
 Rose K. Goldsen, Ph.D., Associate Professor of Sociology²
 Melvin J. Goldstein, Ph.D., Associate Professor of Chemistry
 Kurt Gottfried, Ph.D., Associate Professor of Physics
 Paul A. Gottschalk, Ph.D., Instructor in English
 Richard Graham, Ph.D., Assistant Professor of Latin American History
 Guy Everett Grantham, Ph.D., Professor of Physics, Emeritus
 Robert Greenblatt, Ph.D., Assistant Professor of Mathematics
 Kenneth Ingvard Greisen, Ph.D., Professor of Physics
 Alexander B. Griswold, B.A., Visiting Professor of the History of Southeast
 Asian Art and Archaeology
 Donald Eugene Groom, Ph.D., Instructor in Physics
 Franz Lucretius Gross, Ph.D., Assistant Professor of Physics
 Leonard Gross, Ph.D., Associate Professor of Mathematics
 Siegfried Karl Grosser, Ph.D., Instructor in Mathematics
 David I. Grossvogel, Ph.D., Professor of Romance Studies²
 Donald Jay Grout, Ph.D., Given Foundation Professor of Musicology
 Karl Walter Gruenberg, Ph.D., Visiting Professor of Mathematics
 Henry Guerlac, Ph.D., Goldwin Smith Professor of the History of Science¹
 Wilson M. Gulick, Jr., Ph.D., Assistant Professor of Chemistry
 Andrew Hacker, Ph.D., Professor of Government
 Robert Anderson Hall, Jr., Litt. D., Professor of Linguistics
 Gordon G. Hammes, Ph.D., Professor of Chemistry
 Louis N. Hand, Ph.D., Associate Professor of Physics
 Geoffrey Hartman, Ph.D., Professor of Comparative Literature and English³
 Paul Leon Hartman, Ph.D., Professor of Physics³
 Juris Hartmanis, Ph.D., Professor of Computer Science
 Martin O. Harwit, Ph.D., Associate Professor of Astronomy
 Baxter L. Hathaway, Ph.D., Professor of English
 David Hawkes, Ph.D., Visiting Professor of Chinese Literature
 Donald P. Hayes, Ph.D., Assistant Professor of Sociology
 Cyril Hazard, Ph.D., Visiting Associate Professor of Astronomy
 George Harris Healey, Ph.D., Professor of English and Curator of Rare Books

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David Wilson Henderson, Ph.D., Assistant Professor of Mathematics
Carl Samuel Herz, Ph.D., Professor of Mathematics
Judith Scherer Herz, Ph.D., Lecturer in English
George P. Hess, Ph.D., Professor of Biochemistry, Section of Biochemistry
and Molecular Biology, Division of Biological Sciences
George H. Hildebrand, Ph.D., Professor of Economics
Peter John Hilton, Ph.D., Professor of Mathematics³
James Lynn Hoard, Ph.D., Professor of Chemistry¹
Charles Francis Hockett, Ph.D., Professor of Linguistics and Anthropology
Roald Hoffmann, Ph.D., Associate Professor of Chemistry
Donald Frank Holcomb, Ph.D., Professor of Physics
Robert W. Holley, Ph.D., Professor of Biochemistry, Section of Biochemistry
and Molecular Biology, Division of Biological Sciences
Alan R. Holmberg, Ph.D., Henry Scarborough Professor of Social Sciences
William C. Holmes, M.A., Assistant Professor of Music
William Innes Homer, Ph.D., Associate Professor of the History of Art
Martin Horwitz, M.A., Assistant Professor of Russian Literature
John Tseng Hsin Hsu, M.M., Associate Professor of Music
Peter J. Huber, Ph.D., Visiting Professor of Mathematics
Robert E. Hughes, Ph.D., Professor of Chemistry
Melvin Lovell Hulse, Ph.D., Professor of Education, Emeritus
Karel Husa, Master School Diploma in Composition, Professor of Music
John Greenwood Brown Hutchins, Ph.D., Professor of Business History and
Transportation
James Hutton, Ph.D., Kappa Alpha Professor of the Classics
John Maxwell Irvine, Ph.D., Instructor in Physics
Richard Jon Jackoboice, M.M., Instructor in Music
Augusta L. Jaryc, B.A., Lecturer in Russian
James J. John, Ph.D., Professor of Paleography and Medieval History
Harold J. Johnson, Ph.D., Assistant Professor of Psychology
John Raven Johnson, Ph.D., Todd Professor of Chemistry, Emeritus
O. J. Matthijs Jolles, Ph.D., Professor of German Literature
Robert Burton Jones, Jr., Ph.D., Associate Professor of Linguistics
Donald Kagan, Ph.D., Associate Professor of Ancient History³
George McTurnan Kahin, Ph.D., Professor of Government³
Alfred E. Kahn, Ph.D., Professor of Economics
Peter Jack Kahn, Ph.D., Assistant Professor of Mathematics
Michael G. Kammen, Ph.D., Assistant Professor of American History
Bruce E. Kaplan, B.S., Assistant Professor of Chemistry
Carol Kaske, Ph.D., Lecturer in English
Robert Earl Kaske, Ph.D., Professor of English
Michael William Kaufman, M.A., Instructor in English
Gerald Baptiste Kelley, Ph.D., Associate Professor of Linguistics
Myron Slade Kendrick, Ph.D., Professor of Economics and Public Finance,
Emeritus
Kenneth A. R. Kennedy, Ph.D., Assistant Professor of Anthropology
Eldon Gorden Kenworthy, M.A., Assistant Professor of Government
Harry Kesten, Ph.D., Professor of Mathematics
Jack Carl Kiefer, Ph.D., Professor of Mathematics³
George Arthur Kiersch, Ph.D., Professor of Geological Sciences

- Robert Wylie Kilpatrick, Ph.D., Assistant Professor of Economics
 Otto Kinkeldey, Ph.D., Professor of Musicology, Emeritus
 Toichiro Kinoshita, Ph.D., Professor of Physics³
 John R. Kirkland, Ph.D., Assistant Professor of History
 John Kirkpatrick, Professor of Music³
 Gordon MacDonald Kirkwood, Ph.D., Professor of the Classics
 Don W. Kleine, Ph.D., Assistant Professor of English
 Simon Bernard Kochen, Ph.D., Professor of Mathematics³
 Helmut G. Koenigsberger, Ph.D., Professor of Early Modern European History
 Edward Kostiner, B.S., Assistant Professor of Chemistry
 Norman Kretzmann, Ph.D., Associate Professor of Philosophy
 John W. Kronik, Ph.D., Associate Professor of Romance Studies
 James Arthur Krumhansl, Ph.D., Professor of Physics³
 Herbert L. Kufner, Ph.D., Professor of Linguistics
 Walter F. LaFeber, Ph.D., Associate Professor of American History
 Bernd Lambert, Ph.D., Assistant Professor of Anthropology
 William Wilson Lambert, Ph.D., Professor of Psychology, Sociology, and Anthropology
 James Stephen Langer, Ph.D., Visiting Associate Professor of Physics
 Jerome R. LaPittus, M.A., Assistant Professor of Economics
 Albert Washington Laubengayer, Ph.D., Professor of Chemistry, Emeritus
 David M. Lee, Ph.D., Associate Professor of Physics³
 Richard Leaman Leed, Ph.D., Associate Professor of Linguistics²
 Wesley Ernest LeMasurier, Ph.D., Assistant Professor of Geological Sciences
 Earle Scott Lenker, Ph.D., Assistant Professor of Geological Sciences
 Samuel Leeson Leonard, Ph.D., Professor of Endocrinology, Section on Genetics, Development, and Physiology, Division of Biological Sciences
 Harry Levin, Ph.D., Professor of Psychology
 Simon Asher Levin, Ph.D., Assistant Professor of Mathematics
 John Wilson Lewis, Ph.D., Associate Professor of Government
 John E. Lind, Jr., Ph.D., Assistant Professor of Chemistry
 William Charles Lipke, M.A., Instructor in the History of Art
 Alexander L. Lipson, M.A., Assistant Professor of Linguistics
 Raphael Max Littauer, Ph.D., Professor of Physics
 S. Alexandra Littauer, M.A., Lecturer in French
 Ta-Chung Liu, Ph.D., Goldwin Smith Professor of Economics³
 George Roger Livesay, Ph.D., Professor of Mathematics
 Franklin A. Long, Ph.D., Professor of Chemistry
 Richard H. W. Longabaugh, Ed. D., Assistant Professor of Sociology
 Pardee Lowe, Jr., Ph.D., Assistant Professor of Linguistics
 Anthony Girard Lozano, Ph.D., Assistant Professor of Linguistics
 Thomas F. Lynch, M.A., Assistant Professor of Anthropology
 David Barry Lyons, Ph.D., Assistant Professor of Philosophy
 James B. Maas, M.A., Assistant Professor of Psychology
 Robert Brodie MacLeod, Ph.D., Susan Linn Sage Professor of Psychology
 Detley Mahnke, Ph.D., Lecturer in German Literature
 Herbert Mahr, Ph.D., Associate Professor of Physics
 Norman Malcolm, Ph.D., Susan Linn Sage Professor of Philosophy

- Frederick George Marcham, Ph.D., Goldwin Smith Professor of English History
- James W. Marchand, Ph.D., Professor of Linguistics
- Carol L. Marks, Ph.D., Assistant Professor of English
- James Frederick Mason, Ph.D., Professor of Romance Languages and Literatures, Emeritus
- Bruce Wright Maxfield, Ph.D., Instructor in Physics
- Robert W. Mayberry, M.A., Instructor in English
- Dan Elliott McCall, M.A., Instructor in English
- Richard E. McCarty, Ph.D., Assistant Professor, Section of Biochemistry and Molecular Biology, Division of Biological Sciences
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