

CORNELL UNIVERSITY
ANNOUNCEMENTS

APRIL 13, 1964

ARTS AND SCIENCES
1964-1965

COLLEGE OF ARTS AND SCIENCES

ACADEMIC CALENDAR (Tentative)

1964-1965

1965-1966

Sept. 19	S	Freshman Orientation	S	Sept. 18
Sept. 21	M	Registration, new students	M	Sept. 20
Sept. 22	T	Registration, old students	T	Sept. 21
Sept. 23	W	Instruction begins, 1 p.m.	W	Sept. 22
Nov. 11	W	Midterm grades due	W	Nov. 10
Thanksgiving recess:				
Nov. 25	W	Instruction suspended, 12:50 p.m.	W	Nov. 24
Nov. 30	M	Instruction resumed, 8 a.m.	M	Nov. 29
Christmas recess:				
Dec. 19	S	Instruction suspended, 12:50 p.m.	S	Dec. 18
Jan. 4	M	Instruction resumed, 8 a.m.	M	Jan. 3
Jan. 23	S	First-term instruction ends	S	Jan. 22
Jan. 25	M	Second-term registration, old students	M	Jan. 24
Jan. 26	T	Examinations begin	T	Jan. 25
Feb. 3	W	Examinations end	W	Feb. 2
Feb. 4	Th	Midyear recess	Th	Feb. 3
Feb. 5	F	Midyear recess	F	Feb. 4
Feb. 6	S	Registration, new students	S	Feb. 5
Feb. 8	M	Second-term instruction begins	M	Feb. 7
Mar. 26	F	Midterm grades due	S	Mar. 26
Spring recess:				
Mar. 27	S	Instruction suspended, 12:50 p.m.	S	Mar. 26
Apr. 5	M	Instruction resumed, 8 a.m.	M	Apr. 4
May 29	S	Second-term instruction ends	S	May 28
May 31	M	Examinations begin	M	May 30
June 8	T	Examinations end	T	June 7
June 14	M	Commencement Day	M	June 13

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CORNELL UNIVERSITY

**COLLEGE OF
ARTS AND SCIENCES**

1964-1965

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1964-1965

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* Numbers following names indicate: (1) leave of absence, fall term, 1964-1965; (2) leave of absence, spring term, 1964-1965; (3) leave of absence, 1964-1965.

This listing of the faculty of the College of Arts and Sciences does not necessarily include all appointments or resignations for 1964-1965.

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4 ARTS AND SCIENCES

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 DONALD B. SCARL, Ph.D., Instructor in Physics
 HARRY PHILIP SCHANE, JR., B.A., Instructor in Zoology
 HAROLD ABRAHAM SCHERAGA, Ph.D., Sc.D., Professor of Chemistry
 HERBERT W. SCHNOPPER, Ph.D., Instructor in Physics
 RICHARD THOMAS SEIDEN, Ph.D., Professor of Economics
 ALAIN SEZNEC, *Diplome d'études supérieures*, Associate Professor of Romance Literature ¹
 HAROLD E. SHADICK, M.A., Professor of Chinese Literature
 LAURISTON SHARP, Ph.D., Professor of Anthropology
 ROBERT WILLIAM SHAW, Ph.D., Professor of Astronomy
 WILLIAM DAVID SHAW, Ph.D., Instructor in English
 MICHAEL SHINAGEL, M.A., Instructor in English
 SYDNEY S. SHOEMAKER, Ph.D., Associate Professor of Philosophy
 MICHAEL JOSEPH SIENKO, Ph.D., Professor of Chemistry
 ALBERT JOHN SIEVERS, III, Ph.D., Assistant Professor of Physics

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ROBERT H. SILSBEE, Ph.D., Associate Professor of Physics
 ALBERT SILVERMAN, Ph.D., Professor of Physics
 HOWARD J. SIMMONS, M.A., Assistant Professor of Psychology
 WALTER MICHAEL SIMON, Ph.D., Professor of Modern European History
 JAMES EDWARD SKEATH, Ph.D., Instructor in Mathematics
 GEORGE WILLIAM SKINNER, Ph.D., Professor of Anthropology
 WALTER J. SLATOFF, Ph.D., Associate Professor of English ³
 HAROLD ROBERT SMART, Ph.D., Professor of Philosophy, Emeritus
 PATRICIA CAIN SMITH, Ph.D., Professor of Psychology
 ROBERT J. SMITH, Ph.D., Professor of Anthropology
 WEBSTER SMITH, Ph.D., Assistant Professor of the History of Art
 THOMAS ANDREW SOKOL, M.A., Associate Professor of Music
 DONALD F. SOLÁ, Ph.D., Associate Professor of Linguistics
 RICHARD R. K. SORABJI, B.Phil., Assistant Professor of Philosophy
 FRANK LUDWIG SPITZER, Ph.D., Professor of Mathematics
 ROBERT LAMB SPROULL, Ph.D., Professor of Physics ³
 WALTER HUTCHINSON STANTON, Ph.D., Professor of Speech and Drama
 GEORGE J. STALLER, Ph.D., Assistant Professor of Economics
 BRUCE R. STARK, M.A., Instructor in Linguistics
 PETER C. STEIN, Ph.D., Associate Professor of Physics
 BERNT PETTER STIGUM, Ph.D., Assistant Professor of Economics
 TAYLOR WAYNE STOEHR, Ph.D., Assistant Professor of English
 CHARLES JOEL STONE, Ph.D., Assistant Professor of Mathematics ³
 GORDON FRANKLIN STREIB, Ph.D., Professor of Sociology
 SEWALL CUSHING STROUT, JR., Ph.D., Professor of English
 JOSEPH MAYONE STYCOS, Ph.D., Professor of Sociology ¹
 ROBERT STUART SWARD, M.A., Instructor in English
 RICHARD MICHAEL TALMAN, Ph.D., Assistant Professor of Physics
 WAYNE EDWIN THOMPSON, Ph.D., Professor of Sociology ³
 BRIAN TIERNEY, Ph.D., Professor of Medieval History
 DIRAN HAGOPOS TOMBOULIAN, Ph.D., Professor of Physics
 BARBARA TROXELL, M.S., Assistant Professor of Music
 VICTOR W. TURNER, Ph.D., Professor of Anthropology
 JAMES HARVEY TURNURE, Ph.D., Associate Professor of the History of Art
 JOHN REUBEN WAY VALLENTYNE, Ph.D., Professor of Zoology ³
 JAROSLAV VANEK, Ph.D., Associate Professor of Economics
 OSKAR DIEDRICH VON ENGELN, Ph.D., Professor of Geology, Emeritus
 FREDERICK OSWIN WAAGE, Ph.D., Professor of the History of Art and Archaeology
 STEPHEN WAINGER, Ph.D., Assistant Professor of Mathematics
 ROBERT JOHN WALKER, Ph.D., Professor of Mathematics
 HARRY PORTER WEID, Ph.D., Professor of Psychology, Emeritus
 JOHN WEST WELLS, Ph.D., Professor of Geology
 ROBERT HENRY WHITMAN, Ph.D., Assistant Professor of Slavic Linguistics
 HERBERT AUGUST WICHELS, Ph.D., Professor of Speech and Drama, Emeritus
 BENJAMIN WIDOM, Ph.D., Professor of Chemistry ³
 HAROLD WIDOM, Ph.D., Associate Professor of Mathematics
 CHARLES F. WILCOX, JR., Ph.D., Associate Professor of Chemistry
 WALTER FRANCIS WILLCOX, Ph.D., LL.D., Professor of Economics and Statistics,
 Emeritus
 L. PEARCE WILLIAMS, Ph.D., Associate Professor of the History of Science
 ROBIN MURPHY WILLIAMS, JR., Ph.D., Professor of Sociology
 JOHN ALEXANDER WILLIAMSON, Ph.D., Instructor in Mathematics
 JOHN FLETCHER WILSON, Ph.D., Associate Professor of Speech and Drama ²
 KENNETH GEDDES WILSON, Ph.D., Assistant Professor of Physics
 ROBERT RATHBUN WILSON, Ph.D., Professor of Physics
 WILLIAM ABEL WIMSATT, Ph.D., Professor of Zoology

ARTHUR P. WOLF, B.A., Lecturer in Anthropology and Psychology
JOHN ULRICH WOLFF, M.A., Assistant Professor of Linguistics
JACOB WOLFOWITZ, Ph.D., Professor of Mathematics
OLIVER WILLIAM WOLTERS, Ph.D., Professor of Southeast Asian History
WILLIAM MOONEY WOODWARD, Ph.D., Professor of Physics
ALBERT HAZEN WRIGHT, Ph.D., Professor of Zoology, Emeritus
DONALD R. YENNIE, Ph.D., Professor of Physics
MARTIE WING YOUNG, Ph.D., Assistant Professor of the History of Art
ROBERT RAMON ZIMMERMANN, Ph.D., Assistant Professor of Psychology
JEROLD J. ZUCKERMAN, Ph.D., Assistant Professor of Chemistry

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.

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 which he must meet by the end of his sophomore year in college (see page 15). If he has had two or more years of a second foreign language in school and wishes to use that language toward fulfilling this requirement in college, he should also take the Achievement Test in that second language, though he need not do so as early as December or January. Acceptable scores on the Achievement Tests in modern foreign languages will be set to correspond with the actual amount of instruction received at the time the tests are taken and to measure the achievement after one and a half years, two and a half years, or three years of instruction.

An applicant for admission who has completed a year or more of work in another institution of recognized collegiate rank will be expected to have had preparatory work equivalent to that prescribed for freshmen. In addition, his progress in meeting the requirements in courses and hours as listed for underclassmen and admission to upperclass standing will be carefully examined. Action on completed applications for transfer will be taken about May 1.

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 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.

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

The *Announcement of General Information* should be consulted for other matters of general interest such as details on entrance requirements, living expenses, tuition, fees, scholarships, loans, part-time employment, motor vehicle regulations, and student conduct. The various Announcements of Cornell may be obtained by writing to the Announcements Office, Day Hall, Ithaca, New York, or by inquiring at the administrative offices of the several colleges and schools.

ADVANCED PLACEMENT

Advanced placement and advanced standing credit toward the degree of Bachelor of Arts may be achieved 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, Latin, and physics. Both advanced placement and advanced standing credit may be earned by high attainment on departmental examination, given usually at entrance, in the following subjects: biology, botany, chemistry, European history, mathematics, music, physics, and zoology.

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

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

Advanced placement, generally without credit, is possible in some literature courses in modern foreign languages on the basis of high attainment on the Advanced Placement Examination in the language and a qualifying score on the corresponding language achievement test.

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

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

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

REGISTRATION IN COURSES

During a period before the opening of each term, every student will, with the aid of an adviser, prepare a program of studies. For the academic year 1964-1965, registration for the fall term will be held in the period April 20 to April 29, 1964, and registration for the spring term will be held in the period November 9 to November 18, 1964. For late filing of a program of studies a fee of \$10 will be charged.

Every student must register in each term for at least twelve academic hours, exclusive of basic military science 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 July 1 for the fall term and prior to December 15 for the spring term, and again during the first week of instruction. After the first week of instruction, a course may be canceled prior to the date for reporting midterm grades, when such cancellation is in the best interest of the student and after a petition has been approved by the Dean. A \$3 fee may be charged. After that date, a course may be canceled for medical reasons only.

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

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

ADVISERS

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

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

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

THE CURRICULUM

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

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

Program of Courses

Undergraduate courses are offered at four levels numbered as follows:

- 100-199 Introductory courses for freshmen and sophomores, normally carrying three hours of credit. May *not* be taken for credit by upperclassmen. These courses satisfy the group distribution requirements when so specified by the department. (See also the prerequisite requirement of the major.)
- 200-299 Intermediate courses primarily for underclassmen, normally carrying three hours of credit; may not be counted in satisfaction of upper-class 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 science and physical education. These hours may include ad-

vanced standing credit and supplementary summer session study. Advanced standing credit including summer session credit is limited to thirty hours.

2. Meet the requirements in English and foreign language.
3. Complete the basic prerequisites of the major.
4. Present an acceptable plan for completing the distribution requirements. In preparation the underclassman will ordinarily complete the first set of distribution requirements as well as any prerequisite courses necessary for the satisfaction of the second set of distribution requirements as an upperclassman.
5. Be officially accepted into a major.
6. Satisfy the physical education requirement. The University requires that all physically qualified students who are candidates for a baccalaureate degree take physical education during the first four terms of residence. Material describing the course offerings will be made available to entering students by the Department of Physical Education.

Distribution Requirements

A. LANGUAGE

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

2. **FOREIGN LANGUAGE.** This requirement may be completed in ancient or in modern foreign languages. Normally it will be completed by meeting prescribed standards in one language, but it may be satisfied by attaining Qualification in two languages. The hours necessary to meet the language requirement may not be used to satisfy the humanities requirement in literature.

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

In modern languages, Qualification is a level of achievement defined by examination for those languages in which instruction is offered at Cornell. It indicates that a student is qualified to proceed to courses 201 and/or 203. Students may attain Qualification in Burmese, Chinese, French, German, Hindi, Indonesian, Italian, Japanese, Russian, Sinhalese, Spanish, Telugu, Thai, and Vietnamese. Qualification in two of these satisfies the language requirement. Satisfaction of the language requirement in any one of them requires course work beyond Qualification as described below.

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

courses in literature in translation. If he is placed in Course 112, he must pass that three-hour course and the Qualifying Examination and then complete six hours of advanced work in the language. If placed in Course 102, he must pass that six-hour course and the Qualifying Examination 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. A student who wishes to offer two languages may satisfy the requirement by showing Qualification in both languages.

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 28 and April 7 of the 1964-1965 academic year.

For students in course, the Qualifying Examination referred to above is given as the final examination in Courses 102 and 112. Students passing these courses, but failing the Qualifying Examination, may qualify by repeating the Qualifying Examination after an approved program of preparation. The records of students who pass Courses 102 or 112 but fail Qualification will be made available to those in charge of Courses 201 and 203 who may, at their discretion, admit such a student to one of these courses; satisfactory completion of the course shall be considered the equivalent of Qualification. Beyond this point, the amount of study required to satisfy the language requirement will be the same as that which would ordinarily follow the passing of the Qualifying Examination and will depend upon a student's initial placement as described above.

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

B. DISTRIBUTION I

Each student must complete a six-hour sequence in four of the seven groups listed below, including one six-hour sequence in the physical or biological sciences, one in the social sciences or history, and one in the humanities or expressive arts. For specific courses which satisfy these requirements, see the headnotes of the various departments.

1. *Mathematics*
2. *Physical Sciences*
 - Astronomy
 - Chemistry
 - Geology
 - Physics

3. *Biological Sciences*
 - Biology
 - Botany
 - Zoology
4. *Social Sciences*
 - Anthropology

- | | |
|--|----------------------------|
| Economics | Literature |
| Government | Modern Foreign Literatures |
| Linguistics | Philosophy |
| Psychology | 7. <i>Expressive Arts</i> |
| Sociology | History of Art |
| 5. <i>History</i> | Music |
| 6. <i>Humanities</i> | Speech and Drama |
| Classics | |
| English (excluding English 111-112
and 119-120) | |

C. DISTRIBUTION II

Each student must complete before graduation fourteen hours in courses numbered 200 or above in either (a) one set of four courses in one subject, or (b) two sets of closely related courses, each set in a different subject. 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 at Cornell, not excluding approved courses of upperclass study elsewhere. Additionally, he shall:

1. Complete a minimum of sixty hours of upperclass study, of which no more than twelve hours may be taken outside the College. However, specified courses satisfying requirements of the major taken outside the College need not be counted in this twelve-hour maximum. At least fifteen of the required sixty hours must be earned in courses not given by the department supervising his major and not offered by the student in satisfaction of the major. No 100-level course in the College may be counted in the sixty hours of upperclass study.
2. Pass three-fourths of his hours at seventy or better.
3. Complete the distribution requirements.
4. Satisfy the specified requirements of the major as listed by his major department. The major in a subject is defined as including not only the courses in that department but also the courses in related subjects offered in satisfaction of the major requirements. For an upperclass student the normal load per term in his major is two or three courses at the 300 level or above.

CREDIT FOR SUMMER SESSION

Credit for work done in summer sessions at Cornell and elsewhere may under certain circumstances be counted toward the requirements for admission to

upperclass standing. Except for summer session work taken before matriculation in the College, courses must be approved in advance for the particular purpose in mind. Courses taken before matriculation should be limited to the usual college introductory courses and will be subject to approval for advanced standing credit at the time of matriculation.

Summer session credit earned after admission to upperclass standing may not be used to reduce the residence requirement of four terms. Summer field work or other summer session study may not be included in the minimum of thirty-two hours required in the major.

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

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

LEAVES OF ABSENCE

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

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

GRADES AND SCHOLASTIC DISCIPLINE

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

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

An underclassman failing to make satisfactory progress in grades and hours may be placed on probation or asked to leave at any time. Failure to meet the

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

REQUIREMENTS FOR THE DEGREE

Residence

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

Bachelor of Arts

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

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

Bachelor of Arts with Distinction

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

Bachelor of Arts with Honors

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

Honors programs are designed to free the exceptionally promising student for a substantial portion of his time from the ordinary requirements of academic

courses in order that he may be able to broaden and deepen his understanding of the field of his special interest, to explore branches of his subject not represented in the regular curriculum, and to gain experience in original investigation. A candidate for the degree of Bachelor of Arts with Honors is usually required to pass a comprehensive examination in his major subject or to submit a thesis or some other satisfactory evidence of capacity for independent work. When performance has been outstanding, the degree of Bachelor of Arts with High Honors will be conferred. When performance does not justify a degree with Honors, the student may receive course credit toward the degree of Bachelor of Arts.

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

SPECIAL PROGRAMS

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

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

Programs for such students have been arranged in English, in speech, in foreign languages, in social studies, in science, and in mathematics. Advice should be sought early regarding teaching opportunities in these subjects, combination of subjects usually required of teachers, choice of the major subject, and related matters.

Questions may be directed to Professor L. B. Hixon, School of Education, 112 Stone Hall, and to members of the advisory committee representing the various fields of concentration. New students interested in teaching are requested to confer with Professor Hixon in their first term of residence. (See also the *Announcement of the School of Education*.)

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

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

Medical educators are quite generally agreed that when a premedical student is planning his college course, he should not allow his interest in science to exclude studies in the humanities. They are also agreed that it would be unfor-

fortunate for the future of medicine if all premedical students were to take the same premedical course or major in the same subjects.

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

MILITARY TRAINING. Programs leading to a commission are offered in military science, naval science, and air science. 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 Military Training*.

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 2,400,000 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 140,000 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, documents, manuscripts, microfilm, and microcards. Subscriptions to more than 4000 periodicals are maintained. Many of the collections in special fields are distinguished for completeness of coverage and value of individual items.

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

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

HOUSING AND DINING

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

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

Women undergraduate students, with few exceptions, are required to live and take their meals in dormitories or in sorority houses (for members only). Permission to live elsewhere in Ithaca is granted only under exceptional circumstances upon written application to the Dean of Students. An application form

for the residence halls for undergraduate women will be sent with the notice of acceptance from the Office of Admissions, Day Hall.

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

SCHOLARSHIPS AND PRIZES

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

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

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

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

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

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

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

THE ELISABETH REAMER CARSON SCHOLARSHIP ENDOWMENT was established by James H. Carson and Elisabeth Reamer Carson in 1958. Elisabeth Reamer Carson graduated in 1927. The 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. Students enrolled both in the College and in the Law School, the Medical College, or the Graduate School are not eligible.

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, *Chairman*; MESSRS. S. M. BROWN, JR., D. B. DAVIS, D. F. DOWD, A. HACKER, C. ROSSITER, C. STROUT, and R. M. WILLIAMS, JR.

Work in American Studies, not itself a major program, may be undertaken by those students majoring in economics, English, government, history, history of art, philosophy, and sociology whose achievement qualifies them to go beyond the limits of their major disciplines in an advanced, interdisciplinary exploration of the history and meaning of American culture.

To be admitted to American Studies 401-402 a student must have a minimum cumulative average of 80 in all subjects and of 85 in courses in the humanities, history, and the social sciences; must have completed two terms of work in courses numbered 200 or higher in each of the following three categories: (a) American literature, (b) American history, and (c) American government, American economy, and American society; and must secure 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.

Students already enrolled as majors in the spring of 1963 will continue as majors, fulfilling the requirements set forth in the Announcement for 1963-1964.

401-402. SEMINAR IN AMERICAN STUDIES. Throughout the year. Credit four hours a term. Open to specially qualified seniors with consent of instructor. W 2-4. Fall term, Mr. DAVIS; spring term, 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.

THE NEW WORLD AND THE OLD. Spring term. Credit four hours. M W F 12. (See English 334.)

RELIGION IN AMERICAN LITERATURE AND CULTURE. Fall term. Credit four hours. M W F 9. (See English 471.)

ANTHROPOLOGY

MR. A. R. HOLMBERG, *Chairman*; MESSRS. R. ASCHER, H. F. DOBYNS, C. F. HOCKETT, B. LAMBERT, W. W. LAMBERT, A. H. LEIGHTON, MRS. DOROTHEA C. LEIGHTON, MESSRS. T. F. LYNCH, M. F. OPLER, J. M. ROBERTS, L. SHARP, G. W. SKINNER, R. J. SMITH, V. W. TURNER, A. P. WOLF, F. W. YOUNG.

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

ANTHROPOLOGY:

For admission to the major in anthropology a student should have taken Anthropology 101 and 103. Students admitted to the major without having taken Anthropology 101 and 103 must take Anthropology 301, which will not count toward the total hours in the major.

The major is required to take thirty-two hours in anthropology, chosen from among courses at the 300 level or higher. Of these thirty-two hours, at least eight hours must be taken at the

400 level or higher. The specific program of courses is designed for the individual student in consultation with his major adviser.

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

Specialized instruction is offered in Anthropology 411-412 (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 315), anthropological theory and method; 2, topical/comparative ethnology courses; 3, ethnographic surveys; 4, courses in complex societies; 5, archeology; 6, linguistics; 7, physical anthropology; 8, applied anthropology.

The Distribution I requirement in Social Sciences is met in anthropology by Anthropology 101 and 103; or 101 and any 200-level anthropology course; or 103 and any 200-level anthropology course.

SOCIAL RELATIONS:

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

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

a. Either Anthropology 101 or Sociology 101.

b. Either Psychology 101 or Psychology 207 (Introduction to Personality and Social Psychology).

c. Either Industrial and Labor Relations 210 or Psychology 201 (the latter is recommended for the student who intends to take advanced courses in psychology).

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

a. Three pairs or other combinations of related courses at the 300 level or above, to be selected in consultation with the major adviser. These six courses must include two from each of the following disciplines: anthropology, social psychology, sociology.

b. At least one course in methods, to be selected from the following: anthropological methods, techniques of experimentation (psychology), methods in sociology, advanced psychological statistics, the philosophy of science or of social science, advanced statistics (such as Industrial and Labor Relations 510).

c. At least one course in theory which is related to social relations.

d. The senior seminar in social relations (Sociology 495 or Anthropology 495).

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

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

101. INTRODUCTION TO CULTURAL ANTHROPOLOGY. Either term. Credit three hours. Fall and Spring term, lectures M W F 10. Discussion sections to be arranged. Fall term, Mr. SMITH. Spring term, Mr. WOLF.

A comparative study of the organization of cultural behavior in systems of communications, technology, social relations, ritual, ideas, and sentiments; the relation of such systems to personal behavior and to continuity, change, and cultural transfer in history. Illustrative

material is drawn largely from non-Western societies.

103. INTRODUCTION TO ARCHEOLOGY AND PHYSICAL ANTHROPOLOGY. Either term. Credit three hours. Fall and spring term, lectures T Th 11. Discussion sections to be arranged. Mr. ASCHER.

Prehistory and human evolution are studied with emphasis on the varied ways of uncovering, interpreting, and understanding the first

million years of man's biological and cultural development.

202. ANTHROPOLOGY IN THE MODERN WORLD. Spring term. Credit three hours. T Th S 9. Mr. HOLMBERG.

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.

CROSS-CULTURAL RESEARCH METHODS. (See Rural Sociology 216).

232. INDIANS OF THE AMERICAS. Spring term. Credit three hours. M W F 9. Mr. SMITH.

An introduction to selected native cultures of North and South America, with special attention to the history of contact with Euro-American groups and the regularities of culture change.

241. CIVILIZATIONS OF EAST ASIA. Fall term. Credit three hours. T Th S 9. Mr. SKINNER.

An introduction to a number of traditional societies in East Asia, including Chinese, Japanese, Thai, and Javanese. Through the controlled comparison of these civilizations, a general analysis is attempted of the social structure of traditional complex agrarian societies. Attention is also given to the way in which social and cultural factors help account for differences among Asian countries in the nature and pace of modernization.

Courses for Upperclassmen and Graduate Students

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

301. CULTURAL ANTHROPOLOGY. Fall term. Credit four hours. M W F 12. Messrs. SHARP and B. LAMBERT.

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.

302. PREHISTORIC ARCHEOLOGY. Spring term. Credit four hours. M W F 9. Mr. LYNCH.

A study of prehistory from the origins of culture through the beginnings of civilization.

GENERAL LINGUISTICS. (See Linguistics 301.)

304. PHYSICAL ANTHROPOLOGY. Spring term. Credit four hours. M W F 11. Mr. ———.

A study of human evolution from the antecedents of man to the emergence of modern man.

312. CULTURE AND PERSONALITY. Spring term. Credit four hours. Prerequisite, one course at the 100 or 200 level in anthropology, sociology, psychology, or zoology. M W F 10. Messrs. W. LAMBERT and OPLER.

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

315. SURVEY OF ANTHROPOLOGICAL THEORY. Fall term. Credit four hours. Prerequisite, Anthropology 101 or 301, or consent of instructor. M W F 12. Mr. ———.

A study of the main schools of theory (evolutionary, historical, functional, etc.) as they have developed and played their part in the history of anthropology. Attention will also be given to problems of translation of theory into workable research design and strategy.

321. COMPARATIVE SOCIAL ORGANIZATION. Fall term. Credit four hours. Prerequisite, Anthropology 101 or 301, or consent of instructor. M W F 3. Messrs. SHARP and B. LAMBERT.

The varied organization of human relations in selected non-Western societies; case studies of territorial, sex, age, kinship, clique, club, class, and caste bases of interaction and association; the ordering of social roles into systems of conduct; the relations of conduct to technology and world view.

[322. COMPARATIVE POLITICAL AND LEGAL ORGANIZATION. Spring term. Credit four hours. M W F 11. Mr. ROBERTS. Not offered in 1964-1965.]

323. COMPARATIVE RELIGIOUS SYSTEMS. Fall term. Credit four hours. Prerequisite, an introductory course in anthropology, psychology, or philosophy; or sociology of religion; or consent of instructor. M W F 10. Mr. OPLER.

A comparative study of systems of religious thought and behavior found among primitive and non-Western peoples. The material covered

deals with such concepts as animism, magic, witchcraft, ritual, possession, the afterlife, totemism, and shamanism, and with theories of the origin, development, and functions of religion.

324. ART AND CULTURE. Spring term. Credit four hours. M W F 2. Mr. SMITH.

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

[**325. COMPARATIVE ECONOMIC BEHAVIOR.** Fall term. Credit four hours. M W F 11. Mr. HOLMBERG. Not offered in 1964-1965.]

326. FOLKLORE AND CULTURE. Spring term. Credit four hours. M W F 3. Mr. TURNER.

A survey of the oral literature, sacred and secular, of nonliterate peoples and of the sacred texts, myths, and legends of non-Western folk cultures. Regional differences are traced, and problems of symbolism, regional and universal, are considered. The place of folklore in the perpetuation of tradition, the maintenance of values, the codification of religion and custom, and the provision of emotional outlets is probed. Attention is given to the degree and manner in which folklore reflects and justifies other aspects of the culture.

[**327. CONSTANTS AND VARIANTS IN CULTURE.** Fall term. Credit four hours. M W F 2. Mr. ROBERTS. Not offered in 1964-1965.]

[**331. ETHNOLOGY OF NORTH AMERICA.** Fall term. Credit four hours. Prerequisite, Anthropology 101 or 301, or consent of instructor. M W F 3. Mr. ROBERTS. Not offered in 1964-1965.]

332. ETHNOLOGY OF MIDDLE AND SOUTH AMERICA. Spring term. Credit four hours. Prerequisite, Anthropology 101 or 301, or consent of instructor. M W F 9. Mr. HOLMBERG.

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

[**334. ETHNOLOGY OF SOUTHEAST ASIA.** Spring term. Credit four hours. Prerequisite,

Anthropology 101 or 301, or consent of instructor. T Th 2-3:30. Mr. SHARP. Not offered in 1964-1965.]

[**336. ETHNOLOGY OF THE CIRCUMPOLAR AREA.** Spring term. Credit four hours. Prerequisite, Anthropology 101 or 301, or consent of instructor. M W F 2. Not offered in 1964-1965.]

337. ETHNOLOGY OF AFRICA. Fall term. Credit four hours. Prerequisite, Anthropology 101 or 301, or consent of instructor. T Th S 9. Mr. TURNER.

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

338. THE EMERGENCE OF MODERN AFRICA. Spring term. Credit three hours. Permission required. Th 2-4 and discussion groups to be arranged. Mr. TURNER, Mr. FRIEDLAND, and others.

The main stream of developments in Africa from pre-Colonial times approached from the standpoint of social science. While an acquaintance with one or more of these disciplines will be helpful, it is not essential. The emphasis of this survey course will fall successively on the traditional societies; the impact of colonialism and the subsequent emergence of nationalism; the problems, political and social, of independence; and finally, the prospects for economic development. A number of guest lecturers will be invited to address the class.

[**341. CULTURE AND SOCIETY IN INDIA AND SOUTH ASIA.** Fall term. Credit four hours. M W F 9. Mr. OPLER. Not offered in 1964-1965.]

343. CHINESE CULTURE AND SOCIETY: TRADITIONAL. Fall term. Credit four hours. Prerequisite, Anthropology 101 or 301, or consent of instructor. T Th S 10. Mr. SKINNER.

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.

[**344. CHINESE CULTURE AND SOCIETY: COMMUNIST.** Spring term. Credit four hours. Prerequisite, Anthropology 343. T Th S 10. Mr. SKINNER. Not offered in 1964-1965.]

345. JAPANESE CULTURE AND SOCIETY. Fall term. Credit four hours. Prerequisite, Anthropology 101 or 301, or consent of instructor. M W F 9. Mr. SMITH.

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

[348. PEASANT CULTURES OF EUROPE. Spring term. Credit four hours. Prerequisite, Anthropology 101 or 301, or consent of instructor. M W F 3. Not offered in 1964-1965.]

351. ARCHEOLOGY OF THE AMERICAS. Fall term. Credit four hours. M W F 11. Mr. LYNCH.

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

411-412. TOPICS IN ANTHROPOLOGY. Throughout the year. Credit two or four hours. Staff.

413. THEORY OF CULTURE CHANGE. Fall term. Credit four hours. Prerequisite, Anthropology 101 or 301, or consent of instructor. M W F 11. Mr. HOLMBERG.

A study of the 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.

422. ANTHROPOLOGY AND MEDICINE. Spring term. Credit four hours. Prerequisite, Anthropology 101 or 301, or consent of instructor. Hours to be arranged. Mrs. LEIGHTON.

The study of relationships between social science and medicine. Problems of the role of sickness and its treatment in primitive societies; modern medical programs as instances of technological change; social investigations of medical institutions as aspects of the social systems; relationships between sociocultural factors and disease, especially psychiatric disorder.

[424. SEMINAR. CONTENT OF CULTURE. Spring term. Credit four hours. Hours to be arranged. Mr. ROBERTS. Not offered in 1964-1965.]

[441. THE INDIVIDUAL AND THE FAMILY IN CHINESE SOCIETY. Spring term. Credit four hours. Prerequisites, Anthropology 312 or 313, Psychology 207 or 341, Sociology 382, or

consent of instructor. M W F 3. Mr. WOLF. Not offered in 1964-1965.]

442. SEMINAR: COMPARATIVE SOCIAL ORGANIZATION OF COMPLEX SOCIETIES. Spring term. Credit four hours. Prerequisite, Anthropology 321, or consent of instructor. Th 2-4. Mr. SKINNER.

In 1964-1965 the seminar will focus on large-scale organization in preindustrial civilizations. Special attention will be given to the structure of elites, the state and polity, religious organizations, markets and economic systems. The seminar will seek to develop a theoretical framework suitable for such comparative analysis and to test cross-culturally general hypotheses relevant to traditional complex societies.

444. SEMINAR: CHINESE CULTURE AND SOCIAL STRUCTURE. Spring term. Credit four hours. Prerequisite, Anthropology 321 or 343, or consent of instructor. T Th 10. Mr. SKINNER.

Selected problems in the analysis of Chinese cultural and social systems. In 1964-1965, the seminar will focus on family structure and the kinship system. Special attention is given to structural covariation among the major Chinese subethnic groups (including Cantonese, Hokkiens, and Hakkas), to the development of a general paradigm for the Chinese kinship system, and to the significance of the Chinese cases for modern kinship theory.

452. INTERPRETIVE ARCHEOLOGY. Spring term. Credit four hours. Prerequisite, Anthropology 103 or 302 or 351, or consent of instructor. T Th 2. With field and laboratory work arranged. Mr. ASCHER.

A study of archeological theory and procedures emphasizing the reconstruction of cultures and the logic of archeological reasoning.

461. ETHNOLINGUISTICS AND PSYCHOLINGUISTICS. Fall term. Credit four hours. Prerequisites, Anthropology 101 or 301 and Linguistics 201 or 301, or consent of instructor. W 2-4. Mr. HOCKETT.

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

482. SEMINAR: APPLIED ANTHROPOLOGY. Spring term. Credit four hours. Prerequisite, consent of instructor. M 2-4. Mr. DOBYNS.

The principles of anthropology applied to planned programs of change. Designed not only for students of the humanities and social sciences but also for natural scientists

concerned with social and cultural problems involved in technological change, community development, native administration, and modernization in various regions of the world. The seminar is designed especially to prepare advanced undergraduate and graduate students for technical missions abroad.

491-492. HONORS SEMINAR. Throughout the year. Credit four hours. Hours to be arranged. Mr. ASCHER and staff.

495. SOCIAL RELATIONS SEMINAR. Fall term. Credit four hours. Open only to seniors majoring in social relations. Hours to be arranged. Staff.

Graduate Seminars

516. ANTHROPOLOGICAL THEORY. Spring term. Credit four hours. T 4-6. Mr. OPLER.

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

518. METHODS IN ANTHROPOLOGY. Spring term. Credit four hours. W 4-6. Mr. WOLF.

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

[523. COMPARATIVE SYSTEMS OF IDEAS. Fall term. Credit four hours. Th 4-6. Mr. SHARP. Not offered in 1964-1965.]

541. MIDDLE AND SOUTH AMERICA. Fall term. Credit four hours. Prerequisite, consent of instructor. T 4-6. Mr. HOLMBERG.

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

542. AFRICA. Spring term. Credit four hours. F 4-6. Mr. TURNER.

Selected social and cultural problems are considered.

545. INDIA AND SOUTH ASIA. Fall term. Credit four hours. Th 4-6. Mr. OPLER.

An analysis of social, economic, and ideological developments in India and South Asia, and an examination of present tendencies in regard to them.

[546. COMPARATIVE SOCIAL RESEARCH ON CHINA AND JAPAN. Spring term. Credit four hours. Th 2-4. Messrs. SKINNER and SMITH. Not offered in 1964-1965.]

548. SOUTHEAST ASIAN ANTHROPOLOGY. Spring term. Credit four hours. Th 4-6. Mr. SHARP.

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

571. BIOCULTURAL EVOLUTION. Fall term. Credit four hours. T Th 2. Mr. ASCHER.

The origins of man are explored by examining the interplay of natural, biological, and cultural factors.

615-616. DIRECTED RESEARCH. Throughout the year. Credit to be arranged. Hours to be arranged. Staff.

617-618. FIELD RESEARCH. Throughout the year. Credit to be arranged. Staff.

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

ASIAN STUDIES

Mr. R. J. SMITH, *Chairman*; Messrs. A. C. ATWELL, K. BIGGERSTAFF, N. C. BODMAN, J. M. ECIJOLS, G. H. FAIRBANKS, J. GAIR, F. H. GOLAY, C. F. HOCKETT, R. B. JONES, JR., G. MCT. KAHIN, G. B. KELLEY, J. W. LEWIS, T. LIU, R. M. MARSH, J. W. MELLOR, Miss HARRIET C. MILLS, Messrs. B. G. MISRA, M. E. OPLER, R. A. POLSON, H. SHADICK, L. SHARP, G. W. SKINNER, A. P. WOLF, J. U. WOLFF, O. W. WOLTERS, M. W. YOUNG.

The applicant for admission to the major in Asian studies must have completed at least one course selected from among those listed under the Department of Asian Studies and be recom-

mended by the instructor in charge of that course. He must have received a minimum grade of 75 in this and in all other courses taken in the Department.

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

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

The Honors candidate will also take the Honors Course (Asian Studies 401-402) in which he writes his Honors paper. At the end of his junior year, the student should consult with the professor with whom he plans to write his paper to obtain permission to register for the Honors Course. There will be a comprehensive written examination in May of his senior year, administered by the supervisor of his Honors work.

Asia, General

CIVILIZATIONS OF EAST ASIA. Fall term. T Th S 9. Mr. SKINNER. (See Anthropology 241.)

[**SEMINAR: COMPARATIVE SOCIAL RESEARCH ON CHINA AND JAPAN.** Spring term. Th 2-4. Messrs. SKINNER and SMITH. (See Anthropology 546.) Not offered in 1964-1965.]

ECONOMICS OF AGRICULTURAL DEVELOPMENT. Spring term. T Th S 9. Mr. MELLOR. (See Agricultural Economics 154, College of Agriculture.)

SEMINAR ON THE ECONOMICS OF AGRICULTURAL DEVELOPMENT. Spring term. Hours to be arranged. Mr. MELLOR. (See Agricultural Economics 254, College of Agriculture.)

SEMINARS ON ECONOMICS OF TROPICAL AGRICULTURE. Spring term. Hours to be arranged. Mr. POLEMAN. (See Agricultural Economics 257, College of Agriculture.)

COMPARATIVE ECONOMIC SYSTEMS: JAPAN, INDIA, CHINA. Spring term. M W F 9. Mr. GOLAY. (See Economics 365.)

[**PUBLIC POLICY AND ECONOMIC DEVELOPMENT.** Fall term. M W F 9. Mr. GOLAY. (See Economics 371.) Not offered in 1964-1965.]

[**CONTINENTAL GEOGRAPHY (ASIA).** Spring term. M W F 9. Mr. BLOOM. (See Geography and Geology 314.) Not offered in 1964-1965.]

THE UNITED STATES AND ASIA. Fall term. M W F 8. Mr. KAHN. (See Government 377.)

SEMINAR IN THE INTERNATIONAL RELATIONS OF ASIA. Fall term. Hours to be arranged. Mr. KAHN. (See Government 577.)

STUDIES IN ASIAN ART. Spring term. Hours to be arranged. Mr. ATWELL. (See Art 353, College of Architecture.)

[**INTRODUCTION TO ASIAN ART.** Fall term. M W F 11. Mr. YOUNG. (See History of Art 381.) Not offered in 1964-1965.]

ART OF INDIA AND SOUTHEAST ASIA. Spring term. M W F 11. Mr. YOUNG. (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 1964-1965.]

PROBLEMS IN ASIAN ART. Spring term. T 2-4:30. Mr. YOUNG. (See History of Art 484.)

COMPARATIVE RURAL SOCIETIES. Fall term. M W F 11. Mr. POISON. (See Rural Sociology 120, College of Agriculture.)

401-402. HONORS COURSE. Throughout the year. 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.

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: TRADITIONAL. Fall term. T Th S 10. Mr. SKINNER. (See Anthropology 343.)

[**CHINESE CULTURE AND SOCIETY: COMMUNIST.** Spring term. T Th S 10. Mr. SKINNER. (See Anthropology 344.) Not offered in 1964-1965.]

[**THE INDIVIDUAL AND THE FAMILY IN CHINESE SOCIETY.** Spring term. M W F 3. Mr. WOLF. (See Anthropology 441.) Not offered in 1964-1965.]

SEMINAR: CHINESE CULTURE AND SOCIAL STRUCTURE. Spring term. T Th 10. Mr. SKINNER. (See Anthropology 444.)

[**CHINESE GOVERNMENT AND POLITICS.** Fall term. M W F 10. Mr. LEWIS. (See Government 347.) Not offered in 1964-1965.]

[**THE FOREIGN POLICY OF CHINA.** Fall term. M W F 8. Mr. LEWIS. (See Government 478.) Not offered in 1964-1965.]

[**SEMINAR IN THE POLITICS OF CHINA.** Spring term. Hours to be arranged. Mr. LEWIS. (See Government 547.) Not offered in 1964-1965.]

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 3-5. Mr. BIGGERSTAFF. (See History 491-492.)

SEMINAR IN MODERN CHINESE HISTORY. One or two terms. Hours to be arranged. Mr. BIGGERSTAFF. (See History 691-692.)

ART OF CHINA. Fall term. M W F 11. Mr. YOUNG. (See History of Art 383.)

[**CHINESE PAINTING: THE FIRST MILLENNIUM.** Fall term. T 2-4:30. Mr. YOUNG. (See History of Art 485.) Not offered in 1964-1965.]

[**CHINESE PAINTING: THE LATER CENTURIES.** Spring term. T 2-4:30. Mr. YOUNG.

(See History of Art 486.) Not offered in 1964-1965.]

SINO-TIBETAN LINGUISTICS. Throughout the year. Hours to be arranged. Mr. BODMAN. (See Linguistics 575-576.)

[**CHINESE LITERATURE IN TRANSLATION: HISTORICAL AND PHILOSOPHICAL.** Fall term. M W F 10. Mr. SHADICK. (See Literature 321.) Not offered in 1964-1965.]

CHINESE LITERATURE IN TRANSLATION: POETRY, FICTION, DRAMA. Spring term. M W F 10. Mr. SHADICK. (See Literature 322.)

SEMINAR: THEORY AND RESEARCH IN CHINESE SOCIAL STRUCTURE. Spring term. Hours to be arranged. Mr. MARSH. (See Sociology 614.)

LANGUAGE COURSES

ELEMENTARY CHINESE. (See Chinese 101-102.)

ELEMENTARY HOKKIEN CHINESE. (See Chinese 121-122.)

INTERMEDIATE CHINESE I. (See Chinese 201-202.)

INTRODUCTION TO CLASSICAL CHINESE. (See Chinese 213.)

INTERMEDIATE CHINESE II. (See Chinese 301-302.)

INTERMEDIATE CLASSICAL CHINESE. (See Chinese 312.)

CHINESE HISTORICAL AND PHILOSOPHICAL TEXTS. (See Chinese 313.)

HISTORY OF THE CHINESE LANGUAGE. (See Chinese 402.)

LINGUISTIC STRUCTURE OF CHINESE. (See Chinese 403.)

ADVANCED READINGS IN MODERN CHINESE. (See Chinese 411-412.)

[**CLASSICAL CHINESE PROSE.** (See Chinese 414.) Not offered in 1964-1965.]

CLASSICAL CHINESE POETRY AND DRAMA. (See Chinese 416.)

SEMINAR IN CHINESE LITERATURE. (See Chinese 571-572.)

Japan

AREA COURSES

JAPANESE CULTURE AND SOCIETY. Fall term. M W F 9. Mr. SMITH. (See Anthropology 345.)

[**ART OF JAPAN.** Spring term. M W F 11. Mr. YOUNG. (See History of Art 384.) Not offered in 1964-1965.]

Other courses dealing extensively with Japan are Anthropology 241, 546; Economics 365; and Geography 314.

LANGUAGE COURSES

ELEMENTARY JAPANESE. (See Japanese 101-102.)

JAPANESE READING. (See Japanese 201-202.)

JAPANESE COMPOSITION AND CONVERSATION. (See Japanese 203-204.)

SELECTED READINGS IN JAPANESE. (See Japanese 301-302.)

INTRODUCTION TO CLASSICAL JAPANESE. (See Japanese 305-306.)

South Asia

AREA COURSES

[**CULTURE AND SOCIETY IN INDIA AND SOUTH ASIA.** Fall term. M W F 9. Mr. OPLER. (See Anthropology 341.) Not offered in 1964-1965.]

SEMINAR: INDIA AND SOUTH ASIA. Fall term. Th 4-6. Mr. OPLER. (See Anthropology 545.)

SEMINAR: SOUTH ASIAN LINGUISTICS. Either term. Hours to be arranged. (See Linguistics 600.)

Other courses dealing extensively with South Asia are Agricultural Economics 154, 254 (Agr.); Art 353; Child Development 162 (H.E.); Economics 365, 371; Geography 314; Government 343, 377, 577; History of Art 381, 386, 483, 484; and Rural Sociology 218 (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.)

SEMINAR IN HINDI LINGUISTICS. (See Hindi 601.)

ELEMENTARY URDU. (See Urdu 101-102.)

ELEMENTARY SANSKRIT. (See Linguistics 523-524.)

ELEMENTARY PALI. (See Linguistics 525.)

ELEMENTARY SINHALESE. (See Sinhalese 101-102.)

ELEMENTARY TELUGU. (See Telugu 101-102.)

Southeast Asia

AREA COURSES

[**ETHNOLOGY OF SOUTHEAST ASIA.** Spring term. T Th 2-2:30. Mr. SHARP. (See Anthropology 334.) Not offered in 1964-1965.]

SEMINAR: SOUTHEAST ASIAN ANTHROPOLOGY. Spring term. Th 4-6. Mr. SHARP. (See Anthropology 548.)

SEMINAR: ECONOMIC GROWTH IN SOUTHEAST ASIA. Fall term. Hours to be arranged. Mr. GOLAY. (See Economics 675.)

GOVERNMENTS AND POLITICS OF SOUTHEAST ASIA. Spring term. M F 2-3:30. Mr. KAHIN. (See Government 344.)

SEMINAR IN POLITICAL PROBLEMS OF SOUTHEAST ASIA. Spring term. Hours to be arranged. Mr. KAHIN. (See Government 644.)

SOUTHEAST ASIAN HISTORY PRIOR TO THE PERIOD OF WESTERN INFLUENCE. Fall term. T Th S 11. Mr. WOLTERS. (See History 495.)

SOUTHEAST ASIAN HISTORY SINCE THE FIRST ARRIVAL OF EUROPEANS. 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. Fall term. Hours to be arranged. Mr. WOLFF. (See Linguistics 573.)

[SOUTHEAST ASIAN LITERATURE IN TRANSLATION. Spring term. T 2-4. Mr. ECHOLS. (See Literature 318.) Not offered in 1964-1965.]

501-502. SOUTHEAST ASIA. Throughout the year. F 4-6 or to be arranged. Staff.

A graduate-level survey of the cultures and history of Southeast Asia covering the pre-European, colonial, and postcolonial periods, but with particular emphasis on 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. In 1964-1965: Malaysia and Thailand.

Other courses dealing extensively with Southeast Asia are Anthropology 241; Art 353; Economics 371; Geography 314; Government 377, 577; History of Art 381, 386, 483, 484; and Rural Sociology 120, 218 (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 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.) Not offered in 1964-1965.]

[ADVANCED READINGS IN INDONESIAN AND MALAY LITERATURE. (See Indonesian 305.) Not offered in 1964-1965.]

LINGUISTIC STRUCTURE OF INDONESIAN. (See Indonesian 403.)

ELEMENTARY JAVANESE. (See Javanese 221-222.)

INTERMEDIATE JAVANESE. (See Javanese 223-224.)

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.)

ASTRONOMY

Mr. T. GOLD, *Chairman*; Messrs. W. I. AXFORD, M. H. COHEN, M. O. HARWIT, M. R. KUNDU, E. F. SALPETER, R. W. SHAW.

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

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

201. INTRODUCTION TO ASTRONOMY. Fall term. Credit four hours. Lectures, M W F 9. Laboratory, M T Th F 2-4:30. Mr. SHAW.

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

202. INTRODUCTION TO ASTRONOMY. Spring term. Credit four hours. Lectures, M W F 9. Laboratory, M T Th F 2-4:30. Mr. SHAW.

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

Observational Astronomy

305. CELESTIAL NAVIGATION. Spring term. Credit three hours. M W F 11. Mr. SHAW.

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

310. ASTROMETRY. Fall term. Credit four hours. Prerequisites, Astronomy 201-202 and consent of instructor. Hours to be arranged. Mr. SHAW.

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

[315. ASTRONOMICAL SPECTROSCOPY. Spring term. Credit four hours. Prerequisites, Astronomy 201-202 and consent of instructor. Hours to be arranged. Mr. SHAW. Not offered in 1964-1965.]

[410. GEODETIC ASTRONOMY. Spring term. Credit four hours. Prerequisites, upperclass or graduate standing and the consent of the instructor. Hours to be arranged. Mr. SHAW. Not offered in 1964-1965.]

Interpretational Astronomy

320. ORIGIN OF THE SOLAR SYSTEM. Fall term. Credit four hours. Prerequisites, Astronomy 201, the calculus, and the consent of the instructor. M W F 11. Mr. SHAW.

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

330. INTRODUCTION TO ASTROPHYSICS. Fall term. Credit three hours. Prerequisites, the calculus, Physics 207-208, Astronomy 202 or consent of the instructor. Mr. HARWIT.

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

331. INTRODUCTION TO SPACE PHYSICS. Spring term. Credit three hours. Prerequisites, Astronomy 330 or consent of instructor. Mr. HARWIT.

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

340. SPECIAL TOPICS IN ASTRONOMY. Fall or spring term. Credit two or four hours. Prerequisite, consent of the instructor. Staff.

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

[430. STELLAR STRUCTURE. Spring term. Credit four hours. Prerequisites, Astronomy 330 or graduate status and the consent of the instructor. Staff. Not offered in 1964-1965.]

440. THEORETICAL ASTRONOMY. Fall or spring term. Credit two or four hours. Prerequisite, consent of the instructor. Staff.

450. TECHNIQUES OF ASTROPHYSICS. Fall or spring term. Credit two or four hours. Prerequisite, consent of the instructor. Staff.

510. COSMOLOGY AND EVOLUTION. Spring term. Credit three hours. Open to graduate students with the consent of the instructor. Hours to be arranged. Messrs. GOLD and HARWIT.

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

520. RADIO ASTRONOMY. Fall term. Credit three hours. Prerequisites, Astronomy 330 or graduate status and consent of the instructor. Hours to be arranged. Mr. COHEN.

A survey of radio astronomical techniques and solar system radio astronomical studies. Plasma physics near the sun, in space, and near the earth.

521. RADIO ASTRONOMY. Spring term. Credit three hours. Prerequisites, Astronomy 330, or graduate status and consent of the instructor. Hours to be arranged. Mr. COHEN.

A survey of astronomical problems to which radio techniques have been applied. Observational characteristics and current theories for the explanation of radio emission from the galaxy, discrete sources, and external galaxies. The hydrogen line survey of the galaxy and extragalactic surveys. The relation between radio astronomy and theories of the origin of cosmic rays.

530. MAGNETOHYDRODYNAMICAL PROCESSES IN THE SOLAR SYSTEM. Fall term.

Credit three hours. Hours to be arranged. Open to graduate students with the consent of the instructor. Messrs. AXFORD and GOLD.

Solar physics, cosmic ray variations, theories of aurorae, magnetic storms, radiation belts.

540. ADVANCED STUDY AND RESEARCH. Either term. Credit two or four hours. Prerequisite, advanced standing in astronomy and consent of the instructor. Staff.

550. PLANETARY AND LUNAR PHYSICS. Fall term. Credit three hours. Hours to be arranged. Open to graduate students with the consent of the instructor. Messrs. AXFORD and GOLD.

Origin of solar system. Structure and composition of earth, moon, and planets. Planetary atmospheres. Radio and radar information of moon and planets. Nuclear evidence of ages of meteoritic and terrestrial materials.

BIOLOGY

No major is offered in biology in this College (the biology major is in the College of Agriculture). The following course will meet the group requirement in biological science under Distribution I. A student may qualify for advanced placement and credit in biology by superior performance on the Advanced Placement Examination in biology or on a special departmental placement examination to be given at entrance to students who present evidence of particularly thorough training in the subject.

GENERAL BIOLOGY (Biology 101-102, College of Agriculture). Throughout the year. Credit three hours a term. First semester with a grade of 50 or higher is prerequisite to the second, unless special permission to register is obtained from the instructor. Not open to students who have had both Zoology 101-102 and Botany 1-2. Lectures, M W 8, 10, or 11. Laboratory, M T W Th or F 2-4:30, or Th F 8-10:30, or T Th F 10-12:30, or S 9-11:30, or W 7-9:30 p.m. Mr. ——— and Assistants.

Primarily for students who do not plan to major in a biological science, but open to others as well (the course meets the prerequisite requirements of such subjects as genetics, cytology, advanced botany, some zoology courses, etc.). The work is not divided in the 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. The aim is to give students an insight into the principles of biological science and into the methods employed in its study. More specifically, the course deals with the organization, integration, and maintenance of living organisms as energy systems, and with their reproduction, heredity, behavior, and interactions; each topic is interpreted in the light of modern evolutionary theory.

A limited number of top students will be allowed to register in the spring semester for a special laboratory section in which much more independent and experimental work will be possible, and in which topics of special interest to the students, not ordinarily covered in depth in this course, can be examined. This special laboratory section will be taught by Professor Hall.

BOTANY

Mr. G. C. KENT, *Head*; Messrs. H. P. BANKS, D. W. BIERHORST, R. T. CLAUSEN, J. M. KINGSBURY, F. C. STEWARD, J. F. THOMPSON, C. H. UHL.

The science of botany is concerned with the structure, functions, and relationships of plants and their contribution to our society. The purpose of the major in botany is to qualify a student for advanced work in botany or in a related field such as plant genetics, plant breeding, forestry,

plant pathology, or horticulture; and to develop a sufficiently broad understanding of botanical science to fit a student to take advantage of opportunities in the field. Graduate work in botany is recommended for persons planning to enter the botanical profession.

Ordinarily a student will be accepted as a major in botany if he has passed, at a satisfactory level of proficiency, one year of college botany or biology, and of chemistry.

Students majoring in botany are required to take Botany 235, 317, 323, 324, (sixteen hours). In addition each student must select sixteen hours from the following list: Botany 312, 313, 418, 424, 426, 427, 530, 531, 532, 533; Chemistry 353, 355; Biochemistry 400, 401; Plant Pathology 309; Plant Breeding 301.

Qualified students may register in a Special Problems course for informal study or optional problems, under the direction of the professor of their choice.

The Distribution I requirement in Biological Sciences is met in botany by Botany 101-102.

101-102 (1-2). **INTRODUCTORY BOTANY.**

Throughout the year but may be entered in the spring term. Credit three hours a term. If taken after general biology, credit two hours a term. Lectures, T Th 9 or 11. Laboratory, M T W Th or F 2-4:30; T 10-12:30; S 8-10:30; or S 9-11:30. Mr. BANKS and Assistants.

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

Botany 101 is devoted to a study of growth in the flowering plants, with emphasis placed on structure, function, and reproduction.

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

For a complete description of the following courses in botany see the *Announcement of the College of Agriculture*. In satisfaction of degree requirements these courses in botany are counted as courses in the College of Arts and Sciences.

235 (31). **PLANT PHYSIOLOGY.** Either term. Credit four hours.

312 (112). **BIOLOGY OF THE ALGAE.** Fall term. Credit three hours.

313 (113). **BIOLOGY OF THE ALGAE.** Spring term. Credit three hours.

317 (117). **TAXONOMY OF VASCULAR PLANTS.** Fall term. Credit four hours.

323 (123). **PLANT ANATOMY.** Fall term. Credit four hours.

324 (124). **CYTOLOGY.** Fall term. Credit four hours.

325 (125). **MICROTECHNIQUE.** Spring term. Credit two hours.

418 (118). **TAXONOMY AND ECOLOGY OF VASCULAR PLANTS, ADVANCED COURSE.** Spring term. Credit four hours.

424 (224). **CYTOGENETICS.** Spring term. Credit three hours.

[426 (126). **MORPHOLOGY OF VASCULAR PLANTS.** Spring term. Credit four hours a term. Not given in 1964-1965.]

427 (127). **MORPHOLOGY OF VASCULAR PLANTS.** Spring term. Credit four hours a term.

471 (171). **SPECIAL PROBLEMS IN GENERAL BOTANY, ANATOMY, CYTOLOGY, MORPHOLOGY, PALEOBOTANY, PHYCOLOGY, PHYSIOLOGY, TAXONOMY, AND ECOLOGY.** Throughout the year. Credit not less than two hours a term.

530-531 (230-231). **PLANT PHYSIOLOGY, ADVANCED LECTURE COURSE.** Throughout the year. Credit three hours a term.

532-533 (232-233). **PLANT PHYSIOLOGY, ADVANCED LABORATORY COURSE.** Throughout the year. Credit three hours a term.

617 (217). **SEMINAR IN TAXONOMY AND ECOLOGY OF VASCULAR PLANTS.** Fall term. Credit one hour.

639. (239). **SEMINAR IN PLANT PHYSIOLOGY.** Fall and spring terms.

CHEMISTRY

Mr. H. A. SCIERAGA, *Chairman*; MESSRS. A. C. ALBRECHT, S. H. BAUER, A. T. BLUMQUIST, T. C. BRUCE, W. D. COOKE, D. G. FARNUM, R. C. FAY, J. H. FREED, D. H. GESKE, M. J. GOLDSTEIN, R. E. HESTER, J. L. HOARD, J. R. JOHNSON, A. W. LAUBENGAYER, J. E. LIND, F. A. LONG, J. MEINWALD, W. T. MILLER, G. H. MORRISON, R. A. PLANE, R. F. PORTER, M. J. SIENKO, B. WIDOM, C. F. WILCOX, J. J. ZUCKERMAN.

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

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

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

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

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

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

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

Students and members of the teaching staff are required to wear either prescription glasses or safety glasses in all chemistry laboratories. All courses listed below, except Chemistry 353 and 357-358 will be given in the Baker Laboratory of Chemistry.

General identification of the courses listed below is as follows:

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

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

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

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

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

103-104. INTRODUCTION TO CHEMISTRY. Throughout the year. Credit three hours a term. Chemistry 103 is prerequisite to Chemistry 104. Recommended for students who have not had high school chemistry and

for those desiring a more elementary course than Chemistry 107-108. If passed with a grade of 70, this course serves as prerequisite for Chemistry 205 or Chemistry 353. Lectures, M F 10 or 11. Combined discussion-laboratory

period, T W or Th 8-11, M T W Th or F 1:40-4:30. Messrs. FREED, PORTER, and Assistants.

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

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

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

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

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

205. QUALITATIVE INORGANIC ANALYSIS AND IONIC EQUILIBRIUM. Fall term. Credit four hours. Prerequisite, Chemistry 104 with a grade of 70 or better, or Advanced Placement in Chemistry. Lectures, M

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

W 12. Laboratory, T Th 1:40-4:30 or T Th 8-11. Mr. HESTER and Assistants.

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

236. INTRODUCTORY QUANTITATIVE ANALYSIS. Either term. Credit four hours. Prerequisite, Chemistry 205 or 108 or 116. Required of candidates for the degree of A.B. with a major in chemistry. Enrollment is limited in the spring term. Students are encouraged to register for the fall term if possible. Lectures, M W 10. Laboratory: fall term, M W or T Th 1:40-4:30; spring term, M W or T Th 1:40-4:30, or T Th 8-10:50, or F 1:40-4:30 and S 9-12. Mr. GESKE 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. Spring term. Credit three hours. Prerequisites, Chemistry 104 or 108 or 116, Mathematics 293, and Physics 223 or 225 or 227. For engineering students. M W F 9 or 11. Mr. ———.

A brief survey of physical chemistry.

285-286. INTRODUCTORY PHYSICAL CHEMISTRY. Throughout the year. Credit five hours a term. Prerequisites, Chemistry 108 or 116, Mathematics 192, Physics 123, or consent of instructor. For students in engineering, not open to Arts and Sciences students. Lectures, M W F 9. Laboratory lecture, F 12. Laboratories: fall term, M 1:40-4:30 and T 10-12:50 or W Th 1:40-4:30; spring term, M T 1:40-4:30 or W Th 1:40-4:30. Messrs. LIND, ———, and Assistants.

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

353. ELEMENTARY ORGANIC CHEMISTRY. Either term. Credit four hours. Prerequisite,

Chemistry 104 at a grade of 70, or 108, or 116. Enrollment limited in fall term. Primarily for students in the premedical and biological curricula. Chemistry 355 must be taken with Chemistry 353. Lectures, M W F S 11. Mr. BLOMQUIST.

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

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

355. ELEMENTARY ORGANIC LABORATORY. Either term. Credit two hours. Must be taken with Chemistry 353. Laboratory, M W or T Th 2-4:30. Mr. FARNUM 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. Laboratory lecture for all sections, S 8. Laboratory, T Th 1:40-4:30 or F 1:40-4:30 and S 9-12. 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. Chemistry 357 is prerequisite to Chemistry 358. Required of candidates for the degree of B.Ch.E. and A.B. with a major in chemistry. Enrollment limited. Lectures, M W F 9. Laboratory lecture for all sections, S 8. Laboratory: M W or T Th 1:40-4:30, or T Th 8-10:50, or F 1:40-4:30 and S 9-12 (either term). Messrs. MILLER, GOLDSTEIN, and Assistants.

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

380. CHEMICAL BONDING AND PROPERTIES OF ORGANIC MOLECULES. Spring term. Credit three hours. Prerequisite, Chemistry 108, or 116, or 205. Lectures, T Th S 9. Mr. WILCOX.

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

387-388. INTRODUCTORY PHYSICAL CHEMISTRY. Throughout the year. Credit five hours a term. Prerequisites, Chemistry 236, Mathematics 213 or 221, Physics 208, or consent of instructor. Chemistry 387 is prerequisite for Chemistry 388. Required of candidates for the degree of A.B. with a major in chemistry. Lectures, M W F 10. Laboratory: fall term, T 1:40-4:30 or F 1:40-4:30; spring term, M T 1:40-4:30 or W F 1:40-4:30 or S 8-1. Laboratory lecture (fall term only), Th 12. Examinations, Th 7:30 p.m. Mr. BAUER.

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. Mr. BAUER.

The lecture portion of Chemistry 387-388.

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

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

411. INORGANIC CHEMISTRY LABORATORY. Fall term. Credit four hours. Prerequisite or parallel course, Chemistry 387, or consent of the instructor. Hours to be arranged. Mr. ———.

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

421. INTRODUCTION TO INORGANIC RESEARCH. Either term. Credit two or four hours. Prerequisites, Chemistry 387-388 or 285-286 at an average of 80 or better and consent of the instructor. Hours to be arranged. Messrs. FAY, LAUBENGAYER, PLANE, SIENKO, and ZUCKERMAN.

Informal advanced laboratory and library work, planned individually in consultation with a staff member, involving the preparation

and characterization of inorganic substances. A written report is required.

426. INSTRUMENTAL ANALYSIS. Spring term. Credit four hours. Prerequisite, Chemistry 285 or 387 or consent of instructor. Enrollment is limited. Laboratory may be taken separately by graduate students. Lectures, T Th 10. Laboratory, one afternoon a week, to be arranged. Mr. MORRISON and Assistants.

A discussion of the broad aspects of modern analytical chemistry, including ultraviolet, infrared and NMR spectroscopy, chromatography, electrometric methods, and radiochemical techniques.

433. INTRODUCTION TO ANALYTICAL RESEARCH. Either term. Credit two or four hours. Prerequisite, Chemistry 388 with an average of 80 or better or consent of instructor. Hours to be arranged. Messrs. COOKE, GESKE, and MORRISON.

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

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

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

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

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

461. INTRODUCTION TO ORGANIC RESEARCH. Either term. Credit two to four hours. Prerequisites, 456 or 457 and consent of instructor. Primarily for seniors and graduate students as preparation for advanced and independent work. Enrollment limited for undergraduates to those having a record of 80 or better in prerequisite courses. Laboratory and weekly discussion meeting, hours to be arranged. Messrs. BLOMQUIST, BRUCE, FARNUM,

GOLDSTEIN, JOHNSON, MEINWALD, MILLER, 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 stereochemistry; 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. Given in alternate years; not given in 1964-1965.]

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. BAUER, FREED, HOARD, 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. WIDOM.

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

497-498. HONORS SEMINAR AND RESEARCH. Throughout the year. Credit four hours a term. Prerequisite, admission to the Honors Program. Seminar, W 2. Laboratory hours to be arranged. Messrs. HOARD and MEINWALD.

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

written report on the research results is required.

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

Theories of atomic structure and chemical bonding are applied systematically to the elements as they appear in the Periodic System, with emphasis on the stereo-chemistry 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. PLANE and ———.

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

525. ADVANCED ANALYTICAL CHEMISTRY. Fall term. Credit four hours. Prerequisite, Chemistry 286 or 388. For graduate students except by consent of the instructor. Lectures, M W F 8. Mr. COOKE.

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

527. ADVANCED ANALYTICAL CHEMISTRY. Spring term. Credit four hours. Prerequisite, Chemistry 286 or 388. Primarily for graduate students. Lectures, M W F 8. Mr. GESKE.

An intensive examination of contemporary electroanalytical chemistry, electrode kinetics, voltammetry including polarography, coulometry, and chronopotentiometry. Study of chromatographic separation including gas chromatography. Analytical significance of non-aqueous solutions.

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

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

566. PHYSICAL ORGANIC CHEMISTRY. Spring term. Credit three hours. Prerequisite,

Chemistry 565 or consent of instructor. Primarily for graduate students. Lectures, T Th 12. Mr. WILCOX.

Quantitative aspects of organic chemistry.

568. CHEMICAL PATHWAYS IN METABOLISM. Spring term. Credit four hours. Prerequisites, Chemistry 358 and 388, or their equivalents. Primarily for graduate students. Lectures, T Th S 8.

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 1964-1965.]

[572. ORGANIC MECHANISMS PERTAINING TO ENZYME CATALYSIS. Spring term. Credit four hours. Prerequisites, Chemistry 465-466 and a course in general biochemistry. Primarily for graduate students in chemistry and biochemistry. Mr. BRUCE. Not offered in 1964-1965.]

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. Messrs. GOLDSTEIN and JOHNSON.

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.

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

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

Development of the general equations of thermodynamics from the first and second laws. Applications to the study of physico-chemical equilibria in gases, liquids, solids, and liquid solutions. Problems.

14 ARTS AND SCIENCES

580. KINETICS OF CHEMICAL REACTIONS. Spring term. Credit four hours. Prerequisites, Chemistry 481 and 578 or consent of instructor. Lectures, M W F 9 and a discussion period to be arranged.

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

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

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

586. PHYSICAL CHEMISTRY OF PROTEINS. Spring term. Credit four hours. Prerequisite, Chemistry 286 or 388. Primarily for graduate students. Lectures, M W F 8, and fourth hour to be arranged. 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. Mr. HOARD. Offered in alternate years; not offered in 1964-1965.]

593. INTRODUCTION TO QUANTUM MECHANICS. Fall term. Credit four hours. Prerequisite, consent of instructor. Primarily for graduate students. Lectures, M W F 10. Mr. ALBRECHT.

Elementary presentation of the fundamentals of quantum mechanics.

[595. STATISTICAL MECHANICS. Fall term. Credit four hours. Prerequisite, Chemistry 593 or equivalent is desirable but not required.

Primarily for graduate students. Lectures, M W F 11. Mr. WIDOM. Offered in alternate years; not offered in 1964-1965.]

596. QUANTUM MECHANICS OF VALENCE. Spring term. Credit four hours. Prerequisite, Chemistry 593 or its equivalent. Primarily for graduate students. Lectures, M W F 9. Mr. ALBRECHT.

[598. MOLECULAR SPECTRA. Spring term. Credit four hours. Prerequisite, consent of instructor. Primarily for graduate students majoring in physical chemistry and physics. Lectures, hours to be arranged. Mr. BAUER. Not offered in 1964-1965.]

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, or physical chemistry. 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 8:00 p.m. Messrs. BRUCE and FARNUM.

700. BAKER LECTURES. T Th 11. Fall term: Professor F. H. WESTHEIMER, Harvard University. Spring term: Professor H. TAUBE, Stanford University.

THE CLASSICS

Mr. G. M. KIRKWOOD, *Chairman*; Messrs. H. CAPLAN, T. F. GOULD, J. HUTTON, P. PUCCI, I. RABINOWITZ, N. ROBERTSON, F. O. WAAGE.

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

Students whose major study is in the Classics with an emphasis on Latin must include in their

programs before graduation Latin 205-206, 315-316, and 317-318. By arranging courses early with the School of Education, they may meet the requirements for the N.Y. State certificate for high school teaching.

Those whose major study is in Classical Civilization must complete (a) eighteen hours in Latin or Greek; (b) Literature 305-306, and 307, and eight hours selected from the courses listed below under Classical Civilization; and (c) twelve hours in related subjects. Related subjects for this purpose may be any courses in the humanities but selected in conference with the adviser so as to form a coherent and significant experience in the relation between 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 twenty-four hours required for the major study. Students who wish to become candidates for Honors and who have a cumulative average of 80 or better should consult some member of the Department before preregistering for the second term of the junior year.

The Distribution I requirement in the Humanities is satisfied in Classics by the following courses: Greek 201 and 203, 203 and 301, 301-302, or 303-306; Hebrew 201-202 or 202 and 301; 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

Note: All Greek courses may count toward upperclass credit.

101. GREEK FOR BEGINNERS. Either term. Credit three hours. M W F 12. Fall term, Mr. GOULD; spring term, Mr. CAPLAN. Introduction to Attic Greek.

103. ATTIC GREEK. Either term. Credit three hours. Prerequisite, Greek 101. M W F 12. Fall term, Mr. Pucci; spring term, Mr. ROBERTSON. Continuation of Greek 101.

201. ATTIC AUTHORS: PLATO, APOLLODY; EURIPIDES, MEDEA. Either term. Credit three hours. Prerequisite, Greek 103. T Th S 9. Mr. —.

203. HOMER. Either term. Credit three hours. Prerequisite, Greek 201. T Th S 10. Mr. ROBERTSON.

209-210. GREEK COMPOSITION. Throughout the year. Credit one hour a term. Prerequisite, Greek 103 or the equivalent. Th 2. Mr. —.

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. Pucci.

305-306. LYRIC POETRY; AESCHYLUS; THUCYDIDES; DEMOSTHENES. Throughout the year. Credit four hours a term. Pre-

requisite, Greek 301-302. T Th S 9. Fall term, Mr. Pucci; spring term, Mr. KIRKWOOD.

309-310. ADVANCED GREEK COMPOSITION. Throughout the year. Credit one hour a term. Prerequisite, Greek 209-210 or the equivalent. W 2. Mr. GOULD.

381-382. SEMINAR. ARISTOTLE, RHETORIC. Throughout the year. Credit four hours a term. For graduate students. Th 2-4. Mr. Caplan.

[390. **GREEK DIALECTS.** Credit two hours. Not offered in 1964-1965.]

400-401. INDEPENDENT STUDY. For qualified majors.

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.

107. FRESHMAN COURSE: SELECTIONS FROM CICERO AND CATULLUS. Fall term. Credit three hours. Prerequisite, Latin 106 or two units of entrance Latin; may also be taken by those seeking qualification in Latin. T Th S 9.

A considerable amount of review in the fundamentals of Latin will be included in this course.

109. **FRESHMAN COURSE: VIRGIL, AE-NEID.** Either term. Credit three hours. Prerequisite, Latin 107 or three units of entrance Latin. Fall term: M W F 9, 11; spring term, T Th S 9. Mr. ROBERTSON.

111. **FRESHMAN COURSE: CICERO, DE SENECTUTE; MARTIAL, EPIGRAMS.** Fall term. Credit three hours. Prerequisite, Latin 109 or four units of entrance Latin. M W F 9, 11. Mr. CAPLAN.

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. Mr. GOULD.

205-206. **TERENCE, ANDRIA; CATULLUS; HORACE, SATIRES AND EPISTLES; VIRGIL, GEORGICS; LIVY.** Throughout the year. Credit three hours a term. Prerequisite, Latin 112 or the equivalent. M W F 10. Fall term, Mr. KIRKWOOD; spring term, Mr. Pucci.

221-222. **LATIN COMPOSITION.** Throughout the year. Credit one hour a term. Prerequisite, Latin 112 or special permission. W 2. Mr. ———.

315-316. **THE GREATER REPUBLICAN WRITERS: PLAUTUS, CICERO, SALLUST, LUCRETIUS.** Throughout the year. Credit four hours a term. Prerequisite, Latin 205-206. M W F 10. Fall term, Mr. Pucci; spring term, Mr. ———.

[317-318. **LITERATURE OF THE EARLY EMPIRE: TACITUS, ANNALS; JUVENAL; PLINY'S LETTERS; SENECA, LETTERS AND TRAGEDIES.** Throughout the year. Credit four hours a term. Prerequisite, Latin 205-206. Not offered in 1964-1965.]

321-322. **LATIN COMPOSITION.** Advanced course. Credit one hour a term. For undergraduates who have completed Latin 221-222 and for graduate students. M 2. Mr. HUTTON.

[347. **HISTORY OF THE LATIN LANGUAGE.** Fall term. Credit two hours. For upperclassmen and graduate students. Not offered in 1964-1965.]

[350. **COMPARATIVE GRAMMAR OF GREEK AND LATIN.** Spring term. Credit two hours. For upperclassmen and graduate students. Not offered in 1964-1965.]

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.

381-382. **SEMINAR: VIRGIL.** Throughout the year. Credit four hours a term. For graduate students, W 2-4. Mr. HUTTON.

[390. **ITALIC DIALECTS.** Fall term. Credit two hours. For graduate students. Not offered in 1964-1965.]

451-452. **INDEPENDENT STUDY.** For qualified majors.

Honors Courses

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

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

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

Classical Civilization

[408. **CLASSICAL RHETORIC AND ORATORY.** Spring term. Credit four hours. Primarily for graduate students. Not offered in 1964-1965.]

ENGLISH TRANSLATIONS OF GREEK AND LATIN CLASSICS. (See Literature 305-306.)

FOUNDATIONS OF WESTERN THOUGHT. (See Literature 307.)

HUMANISM AND THE RENAISSANCE. (See Literature 314.)

PRINCIPLES OF LITERARY CRITICISM. (See Literature 401.)

CLASSIC MYTHS. (See Literature 218.)

ANCIENT HISTORY. (See History 301-302.)

GREEK HISTORY. (See History 432.)

THE HELLENISTIC AGE. (See History 434.)

THE ROMAN REPUBLIC. (See History 431.)

THE ROMAN EMPIRE. (See History 433.)

INTRODUCTION TO ART. (See History of Art 201-202.)

ART OF THE ANCIENT WORLD. (See History of Art 301.)

GREEK SCULPTURE. (See History of Art 321.)

ART OF THE ROMAN EMPIRE. (See History of Art 322.)

ARCHAEOLOGY. (See History of Art 421.)

Hebrew

Note: All Hebrew courses may count toward upperclass credit.

[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. Not offered in 1964-1965.]

201-202. **CLASSICAL HEBREW PROSE AND POETRY.** Throughout the year. Credit three hours a term. Prerequisite, Hebrew 102 or consent of the instructor. M W F 2. Mr. RABINOWITZ. (Hebrew 202 will not be offered in 1965.)

Selected readings in the historical and prophetic books of the Hebrew Old Testament.

301. **POSTBIBLICAL HEBREW TEXTS.** Fall term. Credit four hours. Prerequisite, Hebrew 202 or consent of the instructor. Hours are to be arranged. Mr. RABINOWITZ.

Reading and interpretation of early rabbinic and medieval Hebrew texts.

THE LITERATURE OF THE OLD TESTAMENT. (See Literature 205-206.)

ECONOMICS

Mr. F. H. GOLAY, *Chairman*; Messrs. G. P. ADAMS, JR., S. E. BERKI, M. G. CLARK, M. A. COPELAND, M. G. DE CHAZEAU, T. E. DAVIS, D. F. DOWD, L. M. FALKSON, G. H. HILDEBRAND, J. G. B. HUTCHINS, A. E. KAHN, R. W. KILPATRICK, T. C. LIU, C. MORSE, D. E. NOVACK, P. M. O'LEARY, R. T. SELDEN, G. J. STALLER, B. P. STIGUM, J. VANEK.

Students wishing to major in economics must have completed both Economics 103 and Economics 104 and, moreover, must have averaged at least 75 in these two courses. Students who have completed only Economics 103 may be provisionally accepted, but only if they have obtained a grade of 80 or better. Freshmen intending to major in economics are advised to begin the course sequence, Economics 103-104, no later than their second term in residence. 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 Departments of American Studies, Anthropology, Asian Studies, Government, History, Mathematics, Philosophy, (Social) Psychology, and Sociology. Prospective majors should therefore anticipate any prerequisites these advanced courses may require, and complete them in their freshman or sophomore year. Programs of related subjects should complement programs of courses in economics, and both must be arranged in consultation with advisers.

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

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

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

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

I. Introductory

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

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

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

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

201-202. ELEMENTARY ECONOMICS. Throughout the year. Credit three hours a term. T Th S 10. Mr. BERKE. Not open to students who have taken Economics 103-104.

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

II. Economic History

321. ECONOMIC HISTORY OF ANCIENT AND MEDIEVAL EUROPE. Fall term. Credit four hours. Open to upperclassmen

with some background in economics or history, or with consent of the instructor. M W F 10. Mr. Dowd.

An examination and analysis of significant processes and relationships in the economic development of Europe in the ancient and medieval periods. Attention will be given to reciprocal relationships between the social and political context and the behavior of the economy over time.

322. ECONOMIC HISTORY OF MODERN EUROPE. Spring term. Credit four hours. Prerequisite, same as for 321. M W F 10. Mr. Dowd.

The period covered is from the close of the Middle Ages to the present.

324. AMERICAN ECONOMIC HISTORY. Spring term. Credit four hours. Prerequisites, Economics 103-104 or consent of the instructor. M W 2-3:15. Mr. NOVACK.

Analysis of the major features of the development of the American economy from the late colonial period to the present. Particular stress will be placed upon the functional relationship between structural changes in the economy and political, demographic, and social variables.

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 & 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.

III. Contemporary Economic Institutions, Practices and Problems

A. MONEY, BANKING, AND PUBLIC FINANCE

231. MONEY, BANKING, AND PUBLIC POLICY. Fall term. Credit three hours. Prerequisite, Economics 103-104. T Th S 10. Mr. ———.

A study of the American financial system with emphasis on the roles played by commercial banks, the federal reserve system, and selected related financial institutions. Monetary, credit, and financial controls influencing general economic stability will be examined. Primarily for non-majors.

331. THE ECONOMICS OF MONEY AND CREDIT. Fall term. Credit four hours. Prerequisite, Economics 103-104. M W F 11. Mr. SELDEN.

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.

[**332. MONETARY THEORY AND POLICY.** Spring term. Credit four hours. Prerequisite, Economics 331. M W F 11. Mr. SELDEN. Not offered in 1964-1965.]

333. FINANCIAL HISTORY OF THE UNITED STATES. Fall term. Credit four hours. Prerequisites, Economics 103-104 and three hours of American history. M W F 11. Mr. O'LEARY.

The development of American financial institutions, problems, and legislation from 1650 through 1940. Monetary media, banking systems and operations, public finance, and certain private financial institutions will be examined against the changing background of the American political and economic system. Lectures, library readings, and reports.

335. PUBLIC FINANCE: RESOURCE ALLOCATION. Fall term. Credit four hours. Prerequisite, Economics 103-104. T Th S 9. Mr. KILPATRICK.

An analysis of the role of government in allocating resources through taxes and expenditures. Criteria for evaluation will be developed and applied to specific policies. Attention will focus on the federal government.

336. PUBLIC FINANCE: FISCAL POLICY. Spring term. Credit four hours. Prerequisite, Economics 103-104. T Th S 9. Mr. KILPATRICK.

A study of macroeconomic theory and the effects of taxation and expenditure policy on national income, the price level and economic growth.

See also Economics 631-632, 633-634, 635-636.

B. LABOR ECONOMICS

[**341. ECONOMICS AND PROBLEMS OF LABOR.** Fall term. Credit four hours. Prerequisite, Economics 103-104 or the consent of the instructor. M W F 10. Mr. ———. Not offered in 1964-1965.]

[**342. ORGANIZED LABOR IN MODERN ECONOMIC LIFE.** Spring term. Credit four hours. Prerequisite, Economics 341 or permission of the instructor. M W F 10. Mr. ———. Not offered in 1964-1965.]

[**344. THE STATE IN RELATION TO LABOR.** Spring term. Credit two hours. T Th 2-3. Mr. ———. Not offered in 1964-1965.]

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. BERKI.

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. MESSRS. BERKI and 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 REGULATION (Business & Public Administration 575.) Fall term. Credit three hours. Limited to

seniors who have taken Economics 103-104 or the equivalent. M W F 10. Mr. HUTCHINS.

A study of American transportation focused on economic organization, public policy, and the rate-making process. The emphasis is on the theory and practice of rate making in an environment complicated by fixed, joint, and common costs, by competition among differing modes of transport, and by complex patterns of regulation. Although primary attention is given to railroad economics and policies, other modes are considered from time to time. Reality is introduced by a considerable use of cases. Among the topics discussed are rates and the location of industry and trade, the theory of rates, the development and current content of United States inland transportation policy, the construction of rate systems, problems in competitive marketing, new types of rates and services, certain detailed problems of regulation, and the complexities of inter-carrier relations within a national transportation system.

TRANSPORTATION: ORGANIZATION, ADMINISTRATION AND PUBLIC POLICIES (Business & Public Administration 576). Spring term. Credit three hours. Limited to seniors who have completed Economics 103-104. M W F 10. Mr. HUTCHINS.

A continuation of B&PA 575 dealing with problems of organization, administration, and public policy in the various segments of transportation. The primary topics are: (1) merchant shipping, its economics, organization, rates, administrative problems, and national policies and rivalries; (2) air transport, especially problems of route structure, pricing, costs, regulation, and government promotion; (3) motor carrier transport, particularly problems of size of carrier, route structure, and relations with railroads, water carriers, and various middlemen; (4) domestic water transport and federal waterways policy; and (5) railroad reorganization, particularly with respect to mergers, finance, operations, inter-modal relations, and regulation. 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; reinvest-

ment 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 341-342, 312, 521-522, 523-524, 621-622, 631-632, 633-634, 651-652, 653.

D. INTERNATIONAL AND COMPARATIVE ECONOMICS

361. INTERNATIONAL TRADE THEORY AND POLICY. Fall term. Credit four hours. Prerequisite, Economics 103-104 or consent of the instructor. T Th S 11. Mr. VANEK.

Survey of the principles that have served as guides in the formulation of international trade and commercial policies. The evolution of the theory of international trade, principles and practices of commercial policy, problems of regional integration and customs unions, and institutions and practices of state trading will be emphasized.

362. INTERNATIONAL MONETARY THEORY AND POLICY. Spring term. Credit four hours. Prerequisite, Economics 103-104 or consent of the instructor. T Th S 11. Mr. _____.

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 1964-1965.]

365. COMPARATIVE ECONOMIC SYSTEMS: JAPAN, INDIA, CHINA. Spring term. Credit four hours. M W F 9. Mr. GOLAY.

Capitalism, democratic socialism, and authoritarian socialism in the Far East. Comparative study of major Asian economies in terms of cultural environment and social goals, organization of production, economic institutions and policies, and economic growth.

367. COMPARATIVE ECONOMIC SYSTEMS: SOVIET UNION AND EASTERN EUROPE. Fall term. Credit four hours. Prerequisite, IIR

445 or consent of the instructor. M W F 11. Mr. STALLER.

Advanced discussion of selected topics: economic planning—methods and procedures; growth of gross national product and of industrial production; investment policies; changes in living standards; foreign trade; the Seven-Year Plan. Comparisons with West European countries and with the United States.

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. T Th S 8. Mr. NOVACK.

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 grow and undergo institutional change. Quantitative and qualitative processes are distinguished but treated as closely interdependent. The problems and processes of the transition to modernism are contrasted with those of both older and newer societies of various modern types. 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 & I.R. 445.

IV. Economic Theory

311. INTERMEDIATE MICROECONOMIC THEORY. Either term. Credit four hours. Required of all students majoring in economics. Prerequisite, Economics 103-104. Fall term: M W F 10, T Th S 10. Spring term: M W F 10, T Th S 10. MESSRS. FALKSON, KILPATRICK, MORSE, STIGUM.

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. TRADE FLUCTUATIONS. Either term. Credit four hours. Required of all students majoring in economics. Prerequisite, Economics 103-104 or consent of instructor. Fall term: M W F 11, T Th S 9. Spring term: M W F 11, T Th S 9. MESSRS. COPELAND, STIGUM, ———.

A study of the nature and causes of business recessions, revivals, and booms, and of general price trends, together with a consideration of various alternative methods of prompting business cycle and price stabilization and high levels of employment.

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. W 2-4. Mr. ADAMS. Given only in fall term, 1964-1965.

A survey of the development of economic ideas from the early modern period to the twentieth century. Extensive readings from the Mercantilists, Smith, Ricardo, Mill, and Marshall, with class discussion of these. Supplementary readings from other men and schools will provide material for reports and term papers.

[413. DISSENTING ECONOMIC DOCTRINES AND PROTEST MOVEMENTS. Fall term. Credit two hours. Th 2-4. Mr. ———. Not offered in 1964-1965.]

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. T Th S 10. Mr. COPELAND.

Social accounting with special emphasis on the U.S. National Income and Product Accounts and Flow of Funds Accounts. Other major statistical measurements used in aggregative analysis. Illustrations of the ways aggregate measurements have been used and

problems illustrating their use. The course is intended to prepare students for advanced work in aggregative analysis.

417. INTRODUCTION TO MATHEMATICAL ECONOMICS. Fall term. Credit four hours. Prerequisite, Economics 311 and consent of the instructor. M W F 10. Mr. ———.

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. F 2-4. Mr. ADAMS and Staff.

Readings in books which have been significant in the development of economics.

391-392. HONORS SEMINAR. Throughout the year. Credit three hours in fall, six hours in spring. Required of all seniors who are candidates for Honors. Fall term, M 2-4. Spring term, hours to be arranged. Mr. ADAMS and Staff.

Continuation of Economics 390, together with the writing of an Honors thesis and preparation for the comprehensive Honors examinations.

Graduate Courses and Seminars

511. PRICE AND ALLOCATION THEORY. Fall term. Credit four hours. Prerequisite, consent of the instructor. Hours to be arranged. Mr. LIU.

Theories of utility, demand, production, and pricing, with special emphasis on recent developments.

512. MACROECONOMIC THEORY. Spring term. Credit four hours. Prerequisite, consent of the instructor. Hours to be arranged. Mr. VANEK.

Analysis of the determination of national income, the price level, and economic growth.

521-522. EUROPEAN ECONOMIC HISTORY. Throughout the year. Credit four hours a term. Hours to be arranged. Mr. DOWD.

524. AMERICAN ECONOMIC HISTORY. Spring term. Credit four hours. Hours to be arranged. Mr. NOVACK.

561-562. INTERNATIONAL ECONOMIC THEORY AND POLICY. Throughout the year. Credit four hours a term. Hours to be arranged. Messrs. VANEK and STALLER.

[565. **ECONOMIC PROBLEMS OF LATIN AMERICA.** Spring term. Credit four hours. Hours to be arranged. Mr. DAVIS. Not offered in 1964-1965.]

571-572. ECONOMIC GROWTH AND DEVELOPMENT. Throughout the year. Credit four hours a term. Hours to be arranged. Fall term, Mr. NOVACK. Spring term, Mr. MORSE.

610. ADVANCED MICROECONOMIC THEORY. Spring term. Mr. FALKSON.

611-612. ECONOMIC THEORY. Throughout the year. Spring term, Mr. COPELAND. Given only in spring term, 1964-1965.

613-614. HISTORY OF ECONOMIC THOUGHT. Throughout the year. Mr. ADAMS. Given only in fall term, 1964-1965.

[615. **BUSINESS CYCLES AND GROWTH.** Mr. ———. Not offered in 1964-1965.]

616. INTERMEDIATE MATHEMATICAL ECONOMICS. Spring term. Mr. LIU.

617-618. MATHEMATICAL ECONOMICS. Throughout the year. Mr. STIGUM.

619-620. ECONOMETRICS. Throughout the year. Mr. LIU.

SEMINAR IN ECONOMIC STATISTICS (Industrial and Labor Relations 610). Fall term. Mr. ———.

621-622. EUROPEAN ECONOMIC HISTORY. Throughout the year. Mr. DOWD.

624. AMERICAN ECONOMIC HISTORY. Spring term. Mr. NOVACK.

631-632. MONETARY THEORY AND POLICY. Throughout the year. Mr. SELDEN. Given only in fall term, 1964-1965.

633-634. FINANCIAL THEORY, HISTORY, AND POLICY. Throughout the year. Mr. O'LEARY. Given only in spring term, 1964-1965.

635-636. PUBLIC FINANCE: THEORY AND POLICY. Throughout the year. Mr. KILPATRICK. Given only in fall term, 1964-1965.

637-638. ECONOMICS OF WATER RESOURCE DEVELOPMENT. Throughout the year. Mr. FALKSON.

[641-642. **LABOR ECONOMICS.** Throughout the year. Mr. HILDEBRAND. Not offered in 1964-1965.]

651-652. INDUSTRIAL ORGANIZATION AND REGULATION. Throughout the year. Messrs. KAHN and BERKI.

653. **TRANSPORTATION.** Fall term. Mr. HUTCHINS.

661-662. **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. Given only in spring term, 1964-1965.

675. **ECONOMIC GROWTH IN SOUTH-EAST ASIA.** Fall term. Mr. GOLAY.

676. **THE ECONOMY OF CHINA.** Spring term. Mr. ———.

ENGLISH

Mr. W. M. SALE, JR., *Chairman*; MESSRS. M. H. ABRAMS, B. B. ADAMS, R. M. ADAMS, A. R. AMMONS, Miss JUDITH ANDERSON, Mr. D. N. ARCHIBALD, Miss EVELYN BARISH, Mr. J. P. BISHOP, Mrs. JEAN BLACKALL, MESSRS. A. CAPUTI, M. J. COLACURCIO, G. F. CRONKHITE, V. A. DELUCA, R. M. DURLING, D. D. EDDY, R. H. ELIAS, S. B. ELLEDGE, F. G. FIKE, J. A. FINCH, E. G. FOGEL, K. C. FREDERICK, W. H. FRENCH, B. L. HATHAWAY, G. H. HEALEY, N. HERTZ, Mrs. CAROL KASKE, MESSRS. R. E. KASKE, S. R. KATZ, D. W. KLEINE, Miss CAROL MARKS, MESSRS. J. R. MCCONKEY, H. S. McMILLIN, Mrs. DOROTHY MERMIN, MESSRS. F. E. MINEKA, A. M. MIZENER, D. NOVARR, S. M. PARRISH, F. G. READ, Miss NANCY ROTHWAX, MESSRS. W. D. SHAW, M. SHINAGEL, W. J. SLATOFF, T. W. STOEHR, C. S. STROUT, R. S. SWARD.

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 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.

For provisional admission to the major, students should apply to the Chairman of the Department in the second term of the freshman year or the first term of the sophomore year. Final admission to the major will require (1) completion of Distribution Requirement I; (2) achievement of an average of at least 75 in all courses in English during the two underclass years; (3) approval of a tentative program of study for the upperclass years, including a plan for completing Distribution Requirement II and a balanced selection of courses in the major. Students considering English as their major subject are urged to secure from the Department Office, 245 Goldwin Smith, a detailed description of requirements in English which they will find useful in planning their programs.

Students who wish to apply for the Honors program in English should do so no later than the second term of the freshman year. Under special circumstances, however, students may be accepted as late as the second term of the sophomore year. Students provisionally accepted as Honors candidates will take English 351-352 in the sophomore year. For those accepted into the Honors program, the upperclass course of study will include a minimum of eight four-hour courses. Among these eight courses, Honors candidates will include English 491 and 492 in the junior year, 493 (the Honors Essay Tutorial) in the first term of the senior year, and 494 in the second term of the senior year.

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. They should consult the Chairman of the Department and the Departmental Committee on the Preparation of Teachers, preferably during the second term of the freshman year, to begin planning their programs. 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

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courses in English and are currently registered for a third; non-majors with exceptional qualifications may apply to the Chairman for relief from this requirement.

DISTRIBUTION REQUIREMENTS:

The Distribution I requirement in the Humanities is satisfied in English by English 213-214, English 229-230, 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 Distribution Requirement II: English 225-226, English 229-230, English 255-256, English 343, 344, or 345; or any pair of closely related upperclass courses. Some examples of such pairs of upperclass courses follow: English 321 and 424, dealing with the same period of literary history; English 314 and 318, dealing with contiguous periods; English 338 and 439 dealing with a single literary genre; English 333 and 478, dealing with American literature. Students wishing to satisfy Distribution II with 14 or more hours in English cannot include more than six hours of 200-level courses.

Courses for Freshmen

The Department offers three courses in English for freshmen. English 111-112 is the regular course. Freshmen who are candidates for advanced credit as attested by entrance examinations and by distinguished work in secondary schools may be placed in English 119-120. A smaller number of especially outstanding freshmen will be placed in English 213-214. If so placed, students whose performance meets the standards of the course will be awarded three hours of advanced standing credit in English 119-120 and six hours of advanced standing credit in English 213-214.

111-112. INTRODUCTION TO ENGLISH. Throughout the year. Credit three hours a term. English 111 is prerequisite to English 112. M W F 8, 9, 10, 11, 12, 2, 3; T Th S 8, 9, 10, 11, 12. Mr. McConkey and others.

Practice in writing. Careful study of works by a small number of selected modern writers.

119-120. FORMS OF EXPRESSION. Throughout the year. Credit three hours a term. English 119 is prerequisite to English 120. M W F 9, 10; T Th S 9. Mr. McConkey and others.

A more intensive version of English 111-112 for freshmen who are candidates for advanced credit as attested by entrance examinations and by distinguished work in secondary schools. Students whose writing meets the standards of the course will be recommended for three hours of advanced credit in English composition.

213-214. INTRODUCTION TO LITERATURE. Throughout the year. Credit three hours a term. First term prerequisite to second. Open only to specially qualified freshmen. M W F 11, 2. Mr. Sale and others.

An introductory course in the study of the various forms of literature. For freshmen who are candidates for advanced credit as attested by entrance examinations and by distinguished work in secondary schools. The course will satisfy Distribution Requirement I in the humanities. Students whose writing meets the standards of the course will be recommended for six hours of advanced standing credit in English composition.

MASTERWORKS OF WESTERN LITERATURE. (See Literature 201-202.)

English as a Second Language

The following two courses are offered by the Division of Modern Languages. Foreign students should consult a member of that Division in 108 Morrill Hall.

102. ENGLISH AS A SECOND LANGUAGE. Fall term. Credit three hours. Prerequisite, placement by the instructor. Daily at 10.

211-212. ENGLISH AS A SECOND LANGUAGE. Throughout the year. Credit three hours a term. Prerequisite, placement by the instructor. M W F 11.

Intermediate Courses

"Masterworks of Western Literature" (Literature 202) may be elected in the spring term by freshmen with the permission of the director of the course. Literature 202, followed by Literature 201, may be used to satisfy the Distribution I requirement in the Humanities.

203. SPECIAL FORMS OF WRITING. Either term. Credit three hours. Prerequisite, English 111-112 or the equivalent. Fall term, M W 12 or T Th 10, and conferences to be arranged.

Spring term, M W 9 or T Th 10, and conferences to be arranged. Sections limited to fifteen. Mr. HATHAWAY and others.

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

204. SPECIAL FORMS OF WRITING. 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 111-112 or its equivalent prerequisite to English 205. English 205 or consent of the instructor prerequisite to English 206. M W F 9; T Th S 10. Mr. MINERKA and others.

For sophomores and upperclassmen who, having performed creditably in English 111-112 (or its equivalent), desire to carry on work in expository writing. Practice in writing; individual conferences.

225-226. THE TWENTIETH CENTURY. Throughout the year. Credit three hours a term. First term not prerequisite to the second. Not open to freshmen. M W F 2. Fall term, Mr. KLEINE. Spring term, Mr. READ.

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

229-230. THE AMERICAN LITERARY HERITAGE. Throughout the year. Credit three hours a term. First term not prerequisite to second. First term not open to students who have taken or are currently registered in English 251 or 255. Second term not open to students who have taken or are currently registered in English 225-226, 252, or 256. M W 10 and discussion sections to be arranged. Mr. ELIAS and others.

A study of American literary masterpieces, together with certain British works chosen because of their relevance to American writing. First term: to the Civil War. Second term: the past hundred years.

251-252. GREAT ENGLISH WRITERS. Throughout the year. Credit four hours a term. English 251 prerequisite to English 252. T Th 11 and discussion sections to be arranged. Mr. ABRAMS 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. MIZENER and Mr. FINCH.

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 have taken English 213-214 may elect one 300-level course in the second term of their sophomore year.

Three courses—English 343, 344, and 345—carry three hours credit each and are especially designed for non-majors. All other 300- and 400-level courses carry four hours credit. Courses at the 400-level are open only to students who have taken two four-hour 300-level courses in English and are registered for a third. Non-majors with exceptional qualifications may apply to the Chairman for relief from this requirement.

309. RENAISSANCE POETRY AND PROSE. Fall term. Credit four hours. M W F 9. Mr. FOGEL.

The main traditions in poetry and prose from Spenser to Marvell.

314. LITERATURE OF THE EIGHTEENTH CENTURY. Spring term. Credit four hours. T Th S 9. Mr. SHINAGEL.

The major writers from Dryden to Blake.

315. THE ENGLISH NOVEL FROM DEFOE TO STERNE. Fall term. Credit four hours. T Th S 9. Mr. SHINAGEL.

A critical study of selected novels by Defoe, Richardson, Fielding, Smollett, and Sterne.

317. THE ROMANTIC POETS. Fall term. Credit four hours. T Th S 11. Mr. PARRISH.

The nature of Romanticism, arrived at through a reading of the major poets: Blake, Wordsworth, Coleridge, Byron, Shelley, and Keats.

320. THE VICTORIANS. Spring term. Credit four hours. T Th S 11. Mr. 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.

324. THE VICTORIAN NOVEL. Spring term. Credit four hours. M W F 2. Mr. BISHOP.

A study of early nineteenth-century fiction, including works by the Brontës, Mrs. Gaskell, Thackeray, and Dickens.

333. MAJOR AMERICAN WRITERS OF THE NINETEENTH CENTURY. Fall term. Credit four hours. Not open to students who have taken English 229 or 230. M W F 2. Messrs. BISHOP and COLACURCIO.

A brief survey of the course of American literature and a more detailed study of Poe, Emerson, Thoreau, Hawthorne, Dickinson, Melville, Whitman, Mark Twain, Adams, James, and Crane.

334. THE NEW WORLD AND THE OLD. Spring term. Credit four hours. M W F 12. Mr. STROUT.

American literature and politics, considered in relation to developments in England and Europe. Among the American writers studied will be Irving, Longfellow, Cooper, Hawthorne, Mark Twain, James, and Hemingway.

336. THE MODERN AMERICAN NOVEL. Spring term. Credit four hours. M W F 10. Mr. SALE.

A critical study of American fiction, beginning with Howell and James and concluding with selected contemporary novels.

[338. **THE MODERN ENGLISH NOVEL.** Spring term. Credit four hours. M F W 11. Mr. SALE. Not offered in 1964-1965.]

[339. **REPRESENTATIVE ENGLISH DRAMAS.** Fall term. Credit four hours. T Th S 10. Not offered in 1964-1965.]

DRAMA AND THE THEATRE. (See Literature 301-302.)

343. FORMS OF FICTION. Fall term. Credit three hours. M W F 10. Mr. HATHAWAY.
A study of the forms of narrative in both

prose and verse. Special attention will be given to the short story in the twentieth century.

344. SIX MAJOR POETS. Spring term. Credit three hours. M W F 9. Mr. READ.

A study of substantial selections from Donne, Pope, Keats, Browning, Yeats, and Frost. The poets will be studied against a background of the purposes, methods, and achievements of poetry.

345. MODERN DRAMA. Fall term. Credit three hours. M W F 9. Mr. McMILLIN.

A study of the playwrights of this century, with some attention to continental backgrounds and special emphasis on Shaw, Yeats, O'Casey, O'Neill, and Miller.

366. CHAUCER. Spring term. Credit four hours. M W F 12. Mr. KASKE.

Reading and critical analysis: *Troilus* and a large selection from the *Canterbury Tales*.

368. SHAKESPEARE. Spring term. Credit four hours. M W F 11. Mr. 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. M W F 11. Mr. ELLEDGE.

Intensive study of Milton's poetry and selected prose with special reference to *Paradise Lost*.

[381. **MODERN ENGLISH GRAMMAR.** Fall term. Credit four hours. M W F 12. Mr. HATHAWAY. Not offered in 1964-1965.]

382. THE ENGLISH LANGUAGE. Spring term. Credit four hours. T Th S 11. Mr. FRENCH.

Problems of language: origin, derivation, semantics, usage, and other topics studied historically.

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. KATZ. Spring term, Mr. McCONKEY.

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

388. VERSE WRITING. Spring term. Credit four hours. Prerequisite, consent of the instructor. T Th 2-3:30. Mr. AMMONS.

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

405-406. **OLD ENGLISH PROSE AND POETRY.** Throughout the year. Credit four hours a term. T Th S 12. Mr. FRENCH.

Philology and literature from the Anglo-Saxon invasion to the Norman Conquest. Most of *Beowulf* will be read in the second term. This course is recommended by the department to all first-year graduate students and to all undergraduates who intend to become graduate students.

410. **ELIZABETHANS AND METAPHYSICALS.** Spring term. Credit four hours. M W F 9. Mr. DURLING.

In 1964-1965, emphasis on genre and technique in the poetry of Donne, Jonson, Marvell, and Dryden.

416. **MAJOR EIGHTEENTH-CENTURY AUTHORS.** Spring term. Credit four hours. T Th S 9. Mr. ARCHIBALD.

In 1964-1965 the emphasis will be on the works of Swift, Pope, and Johnson.

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. **ELIZABETHAN AND JACOBAN DRAMA.** Spring term. Credit four hours. T Th S 11. Mr. McMILLIN.

Critical study of plays by Marlowe, Marston, Jonson, Webster, Beaumont, Fletcher, Ford, and others. The development of dramatic forms and the main currents of ideas in dramatic representation by contemporaries of Shakespeare and Donne.

423. **MAJOR VICTORIAN POETS.** Fall term. Credit four hours. T Th S 11. Mr. SHAW.

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

426. **LATE VICTORIAN AND EDWARDIAN LITERATURE (1890-1914).** Spring term. Credit four hours. M W F 10. Mr. PARRISH.

The ways in which such writers as Hopkins and Housman, Hardy and Moore, Wilde and Shaw, Beerbohm and Wells, changed Victorian attitudes and influenced our own.

439. **STUDIES IN THE NOVEL.** Fall term. Credit four hours. T Th S 10. Mr. FINCH.

In 1964 the emphasis will be on the fiction of George Eliot.

441. **RESTORATION AND EIGHTEENTH-CENTURY DRAMA.** Fall term. Credit four hours. T Th S 10. Mr. EDDY.

The drama from Wycherley and Congreve to Goldsmith and Sheridan.

449. **AMERICAN POETRY SINCE 1900.** Fall term. Credit four hours. M W F 12. Mr. FRENCH.

American poets from Robinson to the present; theories of poetry. Reports and papers.

[467. **SIXTEENTH-CENTURY LITERATURE.** Fall term. Credit four hours. M W F 10. Miss ROTHWAX. Not offered in 1964-1965.]

468. **ENGLISH LITERARY CRITICS.** Spring term. Credit four hours. M W F 11. Mr. ELLEDGE.

Some acquaintance with the classical background of English criticism will be assumed; and some attention will be paid to the most influential continental critics; but the emphasis of the course will be on the major English critics from Sidney to Richards.

[469. **SHAKESPEARE.** Fall term. Credit four hours. Prerequisite, English 369. M W F 11. Not offered in 1964-1965.]

471. **RELIGION IN AMERICAN LITERATURE AND CULTURE.** Fall term. Credit four hours. M W F 9. Mr. STROUT.

The evolution from Puritanism to pluralism as it affected literature, thought, and society.

474. **TRANSCENDENTALISM IN AMERICAN LITERATURE.** Spring term. Credit four hours. M W F 11. Mr. CRONKHITE.

The major works of Emerson, Whitman, and Melville, considered in relation to their cultural and intellectual context and to selected writings of contemporaries.

[476. **STUDIES IN EARLY AMERICAN AUTHORS.** Spring term. Credit four hours. M W F 11. Mr. CRONKHITE. Not offered in 1964-1965.]

478. **READINGS IN NINETEENTH-CENTURY AMERICAN AUTHORS.** Spring term. Credit four hours. M W F 9. Mr. COLACURCIO.

The fiction of Hawthorne and Melville in the context of post-Puritan idealism.

482. **HENRY JAMES AND MARK TWAIN.** Spring term. Credit four hours. T Th S 10. Mrs. BLACKALL.

An intensive examination of selected texts of these major American writers, with special attention to their portrayal of the American

character, their methods, and their points of view.

485. STUDIES IN MODERN LITERATURE. Fall term. Credit four hours. M W F 11. Mr. READ.

A critical examination of selected prose and poetry.

495-496. SEMINAR IN WRITING. Throughout the year. Credit four hours each term. Prerequisite, English 385-386 or 388 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 Literature 401.)

THE TEACHING OF ENGLISH. (Education 130E). Either term. Credit four hours. Taught jointly by the Department of English and the School of Education. Fall term: Th 2-4, Mr. NOVARR. Spring term: M 2-4. Miss PEARD.

Emphasis on the teaching of reading, writing, and language. Undergraduates accepted for the English-teaching program should register for this course in the term immediately prior to that in which their practice teaching is scheduled; all others should see Miss Peard before registering.

Honors Courses

Not later than the preregistration period for the spring term of the sophomore year, students should apply to the Chairman of the Department for provisional acceptance as candidates for a degree with Honors in English. 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.

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. ELLEDGE and others.

493. HONORS ESSAY TUTORIAL. Fall term. Credit four hours. Hours to be arranged. Mrs. BLACKALL and others.

494. HONORS COURSE: THE CRITICISM OF POETRY. Spring term. Credit four hours. M W 2-4. MESSRS. ABRAMS and FOGEL.

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 from 501-549, are listed first, followed by spring term courses, with even numbers beginning with 550.

501. INTRODUCTION TO GRADUATE STUDY. Fall term. Credit four hours. Mr. NOVARR.

A survey of the problems, methods, and tools of literary study. For candidates for the M.A. degree.

503. INTRODUCTION TO ADVANCED RESEARCH. Fall term. Credit four hours. Mr. FOGEL.

A study of methods and materials relevant to the solution of problems in scholarly and critical interpretation. For candidates for the Ph.D. degree.

505. MIDDLE ENGLISH. Fall term. Credit four hours. Mr. KASKE.

Reading and critical analysis of major works, excluding Chaucer and the drama.

507. HISTORY AND THEORY OF RHETORIC. Fall term. Credit four hours. Mr. ELLEDGE.

A study, in translation, of Plato's *Phaedrus*, Aristotle's *Rhetoric*, and selected rhetorical texts of Cicero, Quintilian, and Longinus, followed by a survey of English theory of rhetoric and prose style from Bacon through the nineteenth century.

509. MEDIEVAL DRAMA. Fall term. Credit four hours. Mr. BARRY ADAMS.

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

513. SPENSER AND THE RENAISSANCE TRADITION. Fall term. Credit four hours. Mr. DURLING.

Spenser's major works, especially *The Shepheardes Calender* and *The Faerie Queene*, in the context of the European tradition.

***517. THE ROMANTIC PERIOD.** Fall term. Credit four hours. Mr. ABRAMS.

Structure and imagery in the longer Romantic poems.

519. VICTORIAN PROSE. Fall term. Credit four hours. Mr. MINEKA.

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

521. **TWENTIETH-CENTURY LITERATURE.** Fall term. Credit four hours. Mr. READ.

The search for method and form by Joyce, Pound, and Eliot.

523. **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.

525. **NINETEENTH-CENTURY AMERICAN FICTION.** Fall term. Credit four hours. Mr. CRONKHITE.

Selected fiction by Poe, Hawthorne, and Melville; evaluation of relevant criticism.

*527. **AMERICAN POETRY.** Fall term. Credit four hours. Mr. ELIAS.

Special emphasis on the poetry of Emily Dickinson.

529. **HENRY JAMES AND THE MODERN AMERICAN NOVEL.** Fall term. Credit four hours. Mr. MIZENER.

A study of the way Henry James adapted the techniques of realism to the themes of the American romance and of the development of this form in the work of Fitzgerald and Hemingway.

[531. **DRAMATIC LITERATURE.** Fall term. Credit four hours. Mr. CAPUTI. Will be offered in 1965-1966.]

549-550. **CREATIVE WRITING.** Throughout the year. Credit four hours a term. Mr. HATHAWAY.

Practical criticism of "workshop" type focused on the major writing projects of the group.

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. **SHAKESPEARE: THE LAST PLAYS.** Spring term. Credit four hours. Mr. FOGEL.

Studies in the form, meaning, and contempo-

rary literary relations of *Pericles*, *Cymbeline*, *The Winter's Tale*, and *The Tempest*.

564. **SEVENTEENTH-CENTURY LITERATURE.** Spring term. Credit four hours. Mr. NOVARR.

Ben Jonson and Dryden: drama, poetry, and criticism.

566. **MILTON.** Fall 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.

The emphasis will be on the writings of Johnson and Boswell.

*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. **TWENTIETH-CENTURY ENGLISH FICTION.** Spring term. Credit four hours. Mr. KLEINE.

Method and meaning in the novels of such writers as Conrad, Lawrence, and Virginia Woolf.

582. **CLIMATES OF OPINION IN AMERICAN THOUGHT AND LITERATURE.** Spring term. Credit four hours. Mr. STROUT.

Naturalism, humanism, pragmatism.

586. **AMERICAN FICTION.** Spring term. Credit four hours. Mr. ELIAS.

Studies in the fiction of Mark Twain.

590. **LITERARY CRITICISM.** Spring term. Credit four hours. Mr. STOEHR.

New concepts from language theory. Topic for 1964-1965: the language of American fiction.

594. **GRAMMATICAL ANALYSIS.** Spring term. Credit four hours. Mr. HATHAWAY.

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

598. **MASTER'S ESSAY.** Spring term. Credit four hours. Members of the Department.

GEOLOGY AND GEOGRAPHY

Mr. J. W. WELLS, *Chairman*; MESSRS. A. L. BLOOM, W. S. COLE, G. A. KIERSCH, E. S. LENKER,

For admission to a major in geology, students should complete *Geology 101-102*, *Mathematics 111-112*, and *General Chemistry 107-108*, and obtain permission from the departmental major adviser. It is recommended that potential majors complete the following: *Physics 207-208*; a three-credit-hour course in mechanical drawing; and a one-credit-hour course in plane surveying.

Upon acceptance as a major the minimum requirements are: (1) *Geology 322, 351-352, 441, 471-472, and 490*; (2) two elective courses in geology numbered 300 or higher; and (3) six semester hours' credit at an approved summer field camp.

Students considering graduate study in paleontology should elect a distribution sequence of four courses in zoology, whereas those planning graduate study in the physical aspects of geology should select distribution sequences from mathematics, physics, chemistry, or engineering.

The Distribution I requirement in Physical Sciences is satisfied in geology by *Geology 101-102*.

Any of the following sequences of courses will satisfy the Distribution II requirements for non-majors who elect additional work in geology or geography: *Geography 212, 312, 314, Geology 414; Geology 201, 202, 471, 472; Geology 351, 352, and 461, 462 or 451, 452; Geology 322, 421, 441, 542.*

Geography

UNDERCLASS COURSES

111. GENERAL GEOGRAPHY. Fall term. Credit three hours. Lectures, M W F 9. Mr. BLOOM.

Introduction to geography including space relationships, world climates, soils, and geographic provinces. Land use, the natural resources of selected regions, and trade in these resources is emphasized.

212. MINERAL RESOURCES. Spring term. Credit three hours. Lectures, M W F 9. Mr. —.

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 105*, or *Geology 102*. Lectures, M W F 9, and additional assigned problems. Mr. BLOOM. Alternate-year course; not offered in 1964-1965.]

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 1964-1965.

Physical geography, regional climatology, land use, and natural resources of a selected continent or region. Topic for 1964-1965: Latin America.

610. SPECIAL WORK. Throughout the year. Credit variable. Prerequisite, consent of the instructor. Staff.

Special or original investigations in geography on the graduate level.

Geology

UNDERCLASS COURSES

101-102. GENERAL GEOLOGY. Throughout the year. *Geology 101* prerequisite to *Geology 102*. Credit three hours a semester (if taken after *Geology 103* or *Geology 105*, one hour credit the first 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. Messrs. COLE and WELLS.

Introduction to the various aspects of geologic science: mineralogic, lithologic, geomorphic, structural, glacial, historic, and economic. For geology majors and others desiring a comprehensive survey of earth science.

103. GEOLOGY FOR ENGINEERS. Either term. Credit three hours (if taken after *Geology 101-102* or *105*, one hour credit). Lectures: fall term, T Th 9; spring term T Th 9. Laboratory, M W 2-4:30. Mr. —.

A geologic background for engineers, including limitations imposed by geologic conditions.

105. ELEMENTARY GEOLOGY. Either term. Credit three hours. For students in agriculture and home economics. This course cannot be used to satisfy the science requirement of the College of Arts and Sciences. Lecturers, T Th 11. Laboratory, M T W Th F 2-4:30, or 8-10:30. Mr. KIERSCH.

Fundamental principles of geologic science with emphasis on the physical aspects and their influence on the agricultural sciences.

[**201. HISTORIC GEOLOGY.** Fall term. Credit three hours. Prerequisite, Geology 102 or 105. Lectures, M W 9. Laboratory, W 2-4:30. Mr. WELLS. Alternate-year course; not offered in 1964-1965.]

202. ANCIENT LIFE. Spring term. Credit three hours. No prerequisite, but Geology 102 or Geology 105 are desirable. Lectures, M W F 11. Mr. WELLS.

A cultural course devoted to a review of the fossil remains of life in the geologic past as the main basis of the concept of organic evolution. Vertebrate forms from fish to man are stressed.

UPPERCLASS AND GRADUATE COURSES

Structural Geology and Sedimentation

322. STRUCTURAL GEOLOGY. Spring term. Credit four hours. Prerequisite, Geology 102; Geology 352 recommended as additional prerequisite. Lectures, M W 11. Laboratory, M 2-4:30, and additional assigned problems. Field trips. Mr. KIERSCH.

Nature, origin, and recognition of geologic structures. Behavior of geologic materials, stress mechanics, and tectonic principles applied to the solution of geologic problems. Analysis of structural features by three-dimensional methods.

421. SEDIMENTATION. Fall term. Credit four hours. Prerequisite, Geology 352; Geology 441 recommended. For majors in geology and others interested in engineering problems related to sedimentation and surficial deposits. Lectures, M W 11. Laboratory, M 2-4:30, and additional laboratory work. Field trips. Mr. KIERSCH. Alternate-year course; offered in 1964-1965.

Source materials, mechanics of transport and dispersal, depositional environments, lithification and diagenesis of sediments. Analysis of problems these present.

Geomorphology and Glacial Geology

441. GEOMORPHOLOGY. Fall term. Credit four hours. Prerequisite, Geology 102. Lectures, T Th 9. Laboratory, T 2-4:30, and additional assigned problems. Mr. BLOOM.

Description and interpretation of land forms in terms of structure, process, and stage.

542. GLACIAL AND PLEISTOCENE GEOLOGY. Spring term. Credit three hours. Prerequisite, Geology 441. Lectures, T Th 9. Laboratory, T 2-4:30. Several Saturday field trips. Mr. BLOOM.

Glacial processes and deposits and the stratigraphy of the Pleistocene.

Mineralogy, Petrology, and Geochemistry

351. MINERALOGY. Fall term. Credit four hours. Prerequisite, Chemistry 108. Lecture, M 10. Laboratories, W F 2-4:30, and additional assigned problems. Mr. LENKER.

Crystallography, crystal chemistry, and systematic mineralogy of the ore and rock-forming minerals.

352. PETROLOGY. Spring term. Credit four hours. Prerequisite, Geology 351. Prerequisite or parallel, Geology 102. Lectures, M F 10. Laboratory, Th 2-4:30, and additional assigned problems. Mr. LENKER.

Composition, classification, and origin of igneous, sedimentary, and metamorphic rocks.

[**451. OPTICAL MINERALOGY.** Fall term. Credit four hours. Prerequisite, Geology 351. Lecture, W 12. Laboratories, M T 2-4:30, and additional assigned problems. Mr. LENKER. Alternate-year course; not offered in 1964-1965.]

[**452. OPTICAL PETROGRAPHY.** Spring term. Credit four hours. Prerequisites, Geology 352 and 451. Lecture, W 12. Laboratories, M T 2-4:30, and additional assigned problems. Mr. LENKER. Alternate-year course; not offered in 1964-1965.]

551. GEOCHEMISTRY. Fall term. Credit three hours. Prerequisite, Geology 352. Lectures, M W F 8. Mr. LENKER. Alternate-year course; offered in 1964-1965.

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 1964-1965.

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

Paleontology and Stratigraphy

471. INVERTEBRATE PALEONTOLOGY. Fall term. Credit four hours. Prerequisites, Geology 102, and, if possible, invertebrate zoology. For majors in geology and others interested in fossil evidence of the development of organisms. Lectures, T Th 10. Laboratory, W Th 2-4:30. Mr. COLE.

Paleobiology and classification of important fossil invertebrates.

472. BIOSTRATIGRAPHY. Spring term. Credit four hours. Prerequisite, Geology 471. Lectures, T Th 10. Laboratory, W 2-4:30, and additional assigned problems. Mr. WELLS.

Zone fossils, faunas, and faunal provinces of the geologic periods.

571-572. STRATIGRAPHY. Throughout the year. Credit three hours a term. Prerequisites, Geology 102, 471. Lectures: fall term, T Th 9, and W 7:30 p.m.; spring term, T W Th 9. Messrs. COLE and WELLS.

Principles of stratigraphy developed by detailed study of selected American and European systemic examples. Fall term: the Paleozoic. Spring term: the Mesozoic and Cenozoic.

671. MICROPALAEONTOLOGY. Spring term. Credit two hours. Prerequisite, Geology 472, 571, 572. Lecture, W 9. Laboratory, W 2-4:30, and additional assigned problems. Mr. COLE.

Microfossils, chiefly Foraminifera.

[672. STRATIGRAPHY OF NEW YORK STATE. Spring term. Credit three hours. Prerequisite, Geology 571. Lectures, T Th 12, early in the term, followed by all-day and weekend field trips. Mr. WELLS. Alternate-year course; not offered in 1964-1965.]

Metalliferous and Non-Metalliferous Deposits

461. MINERAL DEPOSITS: METALS. Fall term. Credit four hours. Prerequisites, Geology 102 or 103, 351. Lectures, M W F 10. Laboratory, F 2-4:30. Mr. ———.

Principles and processes involved in the formation of mineral deposits, metallic and non-metallic. Modes of occurrence, origin, distribution and utilization of the major, rare, and minor metals.

462. MINERAL DEPOSITS: NON-METALS. Spring term. Credit four hours. Prerequisite,

Geology 461. Lectures, M W F 10. Laboratory, F 2-4:30. Mr. ———.

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. Mr. ———. Alternate-year course; not offered in 1964-1965.]

563. ORE MICROSCOPY. Fall term. Credit two hours. Prerequisite, Geology 351. Laboratory, F S 8-10:30. Mr. ———. Alternate-year course; offered in 1964-1965.

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

Ground Water and Engineering Geology

531. GROUND WATER GEOLOGY. Fall term. Credit three hours. Prerequisite, Geology 421. Lectures M W 9. Laboratory, W 2-4:30, and field trips. Mr. KIERSCH. Alternate-year course; offered in 1964-1965.

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

[533. ENGINEERING GEOLOGY. Fall term. Credit three hours. Prerequisites, Geology 322 and 352. Lectures, M W 9. Laboratory, W 2-4:30. Field trips. Mr. KIERSCH. Alternate-year course; not offered in 1964-1965.]

Exploration Geology

582. EXPLORATION GEOLOGY. Spring term. Credit three hours. Must be taken by all graduate students in geology. Prerequisite, Geology 462. Lectures, M W F 8. Mr. ——— and Staff. Alternate-year course; offered in 1964-1965.

Methods of exploration and appraisal of basic geologic data including aerial photo analysis, mapping, sampling, and evaluation.

690. SPECIAL WORK. Throughout the year. Credit variable. Prerequisite, consent of the instructor. Staff.

Special or original investigations in geology on the graduate level.

SEMINAR IN GEOLOGY. Each term. No credit. For majors and required of graduate students, but open to all who are interested. T 4:45.

Reports and discussion of current research in geology, geography, and related fields.

GOVERNMENT

Mr. W. F. BERNs, *Chairman*; MESSRS. A. A. ALTSHULER, A. D. BLOOM, H. W. BRIGGS, A. T. DOTSON, M. EINAUDI, G. FISCHER, A. HACKER, G. MCT. KAHN, J. W. LEWIS, T. J. LOWI, S. MULLER, C. ROSSITER.

For a major in government the following courses must be completed: (1) Government 101, Government 104, and Government 203; (2) a minimum of twenty-four additional hours in the Department at 300 or above; (3) in related subjects, a minimum of twelve hours selected with the approval of the adviser from courses numbered 300 or above in anthropology, economics, history, philosophy, and sociology. Of the related hours, at least six must be in history. Courses in American studies, subject to the approval of the adviser, may be counted as government or history courses.

Juniors and seniors majoring in the Department who have a grade of 85 or better in one half of the hours they have passed may take supervised study in government. Consent of the instructor is required.

Candidates for the degree of Bachelor of Arts with Honors in Government will complete Government 101, 104, 203, and a minimum of twenty-eight additional hours of work in the Department, including Government 492, 493, and 494, as well as sixteen hours in related subjects.

Students seeking admission to the Department's Honors program must file applications on forms obtainable from the departmental secretary by October 15 of their junior year. Applications should be submitted only by students who have a cumulative average of 85 or better in all courses completed in the Department, or who can present evidence of exceptional promise.

The Distribution 1 requirement in Social Sciences is satisfied in government by Government 101 and 104.

Introductory Courses

101. AMERICAN GOVERNMENT. Fall term. Credit three hours. Open to all students (with first preference for Arts and Sciences students). Lectures, T Th 2. Discussion sections, Th 3; F 10, 11, 2, 3; S 10, 11. Messrs. BERNs, HACKER, ROSSITER, and Staff.

A general introduction to American national government and politics. Emphasis will be placed on historical development, organization, powers, practical working, and problems of federalism.

101. AMERICAN GOVERNMENT. Spring term. Credit three hours. Primarily for non-Arts and Sciences students. Lectures, T Th 9. Discussion sections, Th 3; F 8, 12. Mr. ALTSHULER and Staff.

A general introduction to American national government and politics. Emphasis will be placed on historical development, organization, powers, practical working, and problems of federalism.

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 2. Discussion sections to be arranged. Mr. BLOOM.

A survey of the development of Western political theory from Plato to the present. Readings from the work of the major theorists and an examination of the relevance of their ideas to contemporary politics will be stressed.

American Government and Institutions

312. URBAN POLITICS. Spring term. Credit four hours. Prerequisite, Government 101 or consent of instructor. T Th 10 and a third hour to be arranged. Mr. Lowi.

An examination of the elements of politics in large urban centers and their suburban satellites. Analysis of relationships between governmental activities and political power, making use of systematic studies of selected problems.

313. AMERICAN CONSTITUTIONAL LAW. Fall term. Credit four hours. Open to juniors and seniors only. Prerequisite, Government

101. T Th 12 and a third hour to be arranged. Mr. 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 315-316 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. American history or sociology are recommended preliminary courses. T Th 3-4:30. Mr. LOWI.

An extensive examination of the literature on American parties, pressure groups, and electoral behavior. Analysis of the structure and functions of political organizations and the electoral, interest group, and policy differences between the Democratic and Republican parties at the national, state, and local levels.

318. **THE POLITICAL PROCESS: THE AMERICAN CONGRESS.** Spring term. Credit four hours. Open to sophomores and upperclassmen. Prerequisite, Government 101. T Th 3-4:30. Mr. LOWI.

An intensive study of politics and policy formation in Congress. Special emphasis on the problems of the representative assembly in the twentieth century.

321. **THE POLITICAL PROCESS: THE AMERICAN EXECUTIVE BRANCH.** Fall term. Credit three hours. Prerequisite, Government 101 or consent of instructor. M W F 10. Mr. ALTSHULER.

A consideration of the controversies aroused by the rapid growth and bureaucratization of American government in the twentieth century.

An intensive analysis of the ways in which the major administrative agencies acquire wills of their own, engage in political struggles, and participate in the determination of public policy.

325. **PUBLIC ADMINISTRATION AND PUBLIC POLICY.** Fall term. Credit four hours. Open to sophomores and upperclassmen. Prerequisite, Government 101 or consent of instructor. M W F 12. Mr. DOTSON.

A study of the role of the administrator in the formulation of public policy. An examination of the processes, problems, and effects of executive influence in legislation and adjudication. An effort at redefinition of democratic responsibility in the light of modern political requirements.

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 12. Mr. ALTSHULER.

An analysis of the political and administrative problems associated with government efforts to influence or directly to control economic life. The American experience will be stressed, but brief examinations of nationalization and planning in Western Europe and the Soviet Union will be undertaken for comparative purposes.

425. **POLITICAL BEHAVIOR.** Fall term. Credit four hours. Prerequisite, consent of the instructor. T Th 9 and a third hour to be arranged. Mr. HACKER.

An examination of selected problems in political psychology and political sociology.

428. **PRINCIPLES AND PROBLEMS OF AMERICAN DEMOCRACY.** Spring term. Credit four hours. Open to seniors. Prerequisite, Government 355 and consent of the instructor. Hours to be arranged. Mr. ROSSITER.

A critical examination of selected political and social problems currently facing the American people. Emphasis will be placed upon the extent to which possible solutions of these problems conform to the American tradition and the extent to which the tradition may have to be redefined in the light of present realities.

Comparative Government

333. **GOVERNMENT AND POLITICS OF THE SOVIET UNION.** Fall term. Credit four hours. Open to upperclassmen. Prerequisite, Government 104 or consent of instructor. M W F 12. Mr. FISCHER.

An introduction to the Soviet political system.

338. POLITICS AND MODERNIZATION. Spring term. Credit four hours. Open to upperclassmen. M W F 12. Mr. DOTSON.

A comparative study of political development and social change.

341. CONSTITUTIONAL GOVERNMENT IN EUROPE. Fall term. Credit four hours. Open to upperclassmen. Prerequisite, Government 104. Lectures, T Th 2-3:30. Mr. MULLER.

An analysis of the major problems of constitutional government in Europe in the light of the crisis of totalitarianism and of modern wars. Forms and realities of constitutionalism. Supranational trends. A comparative study of parties and of their role in political life. Extraconstitutional forces and their relationship to institutions.

[343. GOVERNMENT AND POLITICS IN THE COMMONWEALTH. Fall term. Credit four hours. Prerequisite, Government 104. T Th S 9. Mr. MULLER. Not offered in 1964-1965.]

344. GOVERNMENTS AND POLITICS OF SOUTHEAST ASIA. Spring term. Credit four hours. Prerequisite, Government 104 and Government 377 or consent of the instructor. M F 2-3:30. Mr. KAHN.

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. Not offered in 1964-1965.]

Political Theory

351. DEVELOPMENT OF MODERN POLITICAL THOUGHT. Fall term. Credit four hours. Open to upperclassmen. Lectures, T Th 10. Discussion sections, Th 2, 3; F 2, 3. 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, Gov-

ernment 203, and History 315, or consent of the instructor. T Th S 11. Mr. ROSSITER.

Survey of the development of American political thought, with emphasis on the origins and uses of ideas. Other kinds of thought—constitutional, social, religious, economic, educational, cultural—are considered in their relations to political thought.

462. ORIGINS OF WESTERN POLITICAL THOUGHT. Spring term. Credit four hours. Open to sophomores and upperclassmen. M W F 2. Mr. BLOOM.

A survey of the classical political teachings in their development from the pre-Socratics through Greek and Roman antiquity and in their transformation by the revealed religions.

[464. BASIC PROBLEMS IN POLITICAL THEORY. Spring term. Credit four hours. Open to upperclassmen with the consent of the instructor. M W F 9. Mr. BERNS. Not offered in 1964-1965.]

International Relations

372. INTERNATIONAL RELATIONS. Spring term. Credit three hours. Open to sophomores and upperclassmen. M W F 10. Mr. ———.

An analysis of the basic issues, concepts, contents, and methods which characterize relations among states. Ideological, legal, military, and economic elements which may contribute to harmony and dissent will be discussed in terms of both international society and national foreign policies. The over-all frame of reference will consist chiefly of theories, practices, and institutions developed since World War II.

377. THE UNITED STATES AND ASIA. Fall term. Credit three hours. No prerequisites. Open to sophomores and upperclassmen. M W F 8. Mr. KAHN.

An analysis of the relations of the United States with the major states of Asia and with those smaller countries with which it is particularly concerned; attention is also given to the relationship of American policy to the Asian policies of France, Great Britain, and Soviet Russia. Deals primarily with the period since 1945.

381. INTERNATIONAL ORGANIZATION. Fall term. Credit four hours. Open to sophomores and upperclassmen. M W F 9. Mr. BRIGGS.

An analysis of some international governmental procedures and institutions. Particular attention will be given to the background,

organization, and operation of the United Nations, with emphasis on political and legal problems.

471-472. INTERNATIONAL LAW. Throughout the year. Credit four hours a term. Open to qualified upperclassmen. M W F 11. Mr. BRIGGS.

A systematic study of the nature, development, and judicial application of international law. Attention will be given to the role of law in the relations of States. Cases, documentary analysis, and discussions.

[478. THE FOREIGN POLICY OF CHINA. Spring term. Credit four hours. Open to upperclassmen who have taken Government 347. M W F 8. Mr. LEWIS. Not offered in 1964-1965.]

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.

493-494. SENIOR HONORS PROGRAM. Throughout the year. Credit six hours each term. Prerequisite, Government 492. Hours to be arranged. Mr. HACKER.

Extensive reading in the fields of government with tutorial supervision, seminar work, and the preparation of an Honors thesis.

Supervised Study

499. READINGS. Throughout the year. Credit four hours each term. Any member of the Department.

Graduate Seminars

511. SEMINAR IN POLITICAL PARTIES AND ELECTIONS. Fall term. Credit four hours. Open to graduate students and to seniors by consent of instructor. Hours to be arranged. Mr. LOWI.

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.

518. SEMINAR IN CONTEMPORARY PROBLEMS IN CONSTITUTIONAL LAW. Spring

term. Credit four hours. Open to graduate students and qualified seniors who have taken Government 313. Hours to be arranged. Mr. BERNs.

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.

525. SEMINAR IN COMPARATIVE PUBLIC ADMINISTRATION. Fall term. Credit four hours. Open to graduate students and to seniors by consent of instructor. Hours to be arranged. Mr. DOTSON.

528. SEMINAR IN AMERICAN POLITICAL THOUGHT AND INSTITUTIONS. Spring term. Credit four hours. Open to graduate students and qualified seniors. Hours to be arranged. Mr. 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. FISCHER.

536. SEMINAR IN THE ADMINISTRATIVE PROCESS. Spring term. Credit four hours. Open to graduate students and qualified seniors by consent of instructor. Hours to be arranged. Mr. DOTSON.

537. SEMINAR IN POLITICAL DEVELOPMENT AND SOCIAL CHANGE. Fall term. Credit four hours. Open to graduate students and qualified seniors. Hours to be arranged. Mr. FISCHER.

541-542. SEMINAR IN COMPARATIVE GOVERNMENT. Throughout the year. Credit four hours each term. Open to graduate students and to qualified seniors. Hours to be arranged. Mr. EINAUDI.

[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 1964-1965.]

[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 1964-1965.]

[552. SEMINAR IN POLITICAL THEORY. Spring term. Credit four hours. Open to graduate students and to seniors with the

consent of the instructor. Hours to be arranged. Mr. BERNs. Not offered in 1964-1965.]

555-556. **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. 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 1964-1965.]

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. ———.

576. **SEMINAR IN INTERNATIONAL LAW AND INTERNATIONAL ORGANIZATION.**

Spring term. Credit four hours. Open to graduate students and law students. Hours to be arranged. Mr. BRIGGS.

577. **SEMINAR IN THE INTERNATIONAL RELATIONS OF ASIA.** Fall term. Credit four hours. Open to graduate students and qualified seniors who have taken Government 377 or Government 478 and secured the consent of the instructor. Hours to be arranged. Mr. KAHIN.

[583. **SEMINAR IN THE FOREIGN POLICY OF CHINA.** Fall term. Credit four hours. Open to graduate students and to seniors who have taken Government 478. Hours to be arranged. Mr. LEWIS. Not offered in 1964-1965.]

644. **SEMINAR IN POLITICAL PROBLEMS OF SOUTHEAST ASIA.** Spring term. Credit four hours. Open to graduate students and qualified seniors who have taken Government 344 and secured the consent of the instructor. Hours to be arranged. Mr. KAHIN.

HISTORY

Mr. KNIGHT BIGGERSTAFF, *Chairman*; MESSRS. D. B. DAVIS, E. W. FOX, P. W. GATES, R. GRAHAM, H. GUERLAC, D. KAGAN, W. F. LAFFER, F. G. MARCHAM, C. P. NETTELS, W. M. PINTNER, W. M. SIMON, B. TIERNEY, L. P. WILLIAMS, and O. W. WOLTERS.

For admission to the history major a student must have completed an Introduction to Western Civilization, and have earned grades of 75 or better in this and in any other history courses taken. Students who have completed only the first semester of the Introduction to Western Civilization, with a grade of 75 or better, may be provisionally admitted to the major. Prospective majors should apply for admission at the Department of History office.

In fulfillment of the major requirement a student must take twenty-eight hours of history courses numbered 300 or above. 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 numbering 300 or above offered by other departments that relate to his eight-hour concentration in one particular field of history.

Candidates for the Bachelor of Arts with Honors in History will enroll in the Honors Program. Honors candidates will take the Honors Proseminar (History 399) during the fall semester of their junior year. Thereafter they may follow either one of two plans. One plan allows the student to take History 499 during the fall term of the senior year. In that course he will write an essay under the supervision of whichever member of the department he chooses. The other plan allows the student to offer in place of the essay three significant papers written in different history courses numbered 330 or above, these to be submitted by the instructor to the Honors Committee at the student's request following completion of the course. Honors candidates who take History 499 will be given a short oral examination in the field of their concentration toward the end of the senior year. Honors candidates who do not take History 499 will take a comprehensive written examination toward the end of the senior year.

The minimum requirements for admission to candidacy for Honors include (a) a cumulative average of 80 in all academic courses; (b) a cumulative average of 85 in courses in the humanities and social sciences; (c) enrollment and superior performance in at least one course in history before the spring term of the sophomore year. The criteria for the award of the degree with Honors include (a) maintenance of grades of 85 or better in all history and related courses; (b) completion of an Honors essay or three shorter papers of high quality; (c) passing the appropriate examination toward the end of the senior year.

A departmental committee consisting of Messrs. Williams (chairman), Fox, and Davis will supervise the Honors Program during 1963-1964. Applicants for candidacy in 1964-1965 should see the chairman of the Honors Committee prior to preregistration in the spring term of 1964.

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 101-102 to History 323-324 inclusive.

105-106. INTRODUCTION TO WESTERN CIVILIZATION. Throughout the year. Credit three hours a term. For freshmen and sophomores; open to juniors and seniors by permission only. May not be taken for credit by students who have taken History 101-102. First term prerequisite to second except by permission. T Th S 9. Mr. SIMON (105), Mr. FOX (106), 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.

301-302. ANCIENT HISTORY. Throughout the year. Credit three hours a term. Open to sophomores. History 301 is not prerequisite to History 302. M W F 11. Mr. KAGAN.

A survey of ancient history from the beginnings of civilization in the valleys of the Near East to the decline of the Roman Empire.

303-304. MEDIEVAL HISTORY. Throughout the year. Credit three hours a term. Open to sophomores. History 303 is not prerequisite to History 304. T Th S 10. Mr. TIERNEY.

A survey of the main trends of political, economic, intellectual, and religious development in Europe from the fourth century to the fifteenth.

307-308. ENGLISH HISTORY FROM ANGLO-SAXON TIMES TO THE PRESENT. Throughout the year. Credit three hours a term. Open to sophomores. Course 307 not prerequisite to 308. T Th S 11. Mr. MARCHAM.

Traces the growth of government, economic life, religion, the arts, and society among the English people. Illustrates in the history of one nation some of the principal developments of Western civilization since early modern times, such as the nation-state, the late Renaissance, the industrial revolution, the overseas empire, and state socialism. Some of the written work is designed to give elementary training in the interpretation of documentary evidence. Work for the first term ends with the civil wars of the seventeenth century.

309-310. HISTORY OF RUSSIA. Throughout the year. Credit three hours a term. Open to sophomores. History 309 not prerequisite to History 310. M W F 9. Mr. PINTNER.

A survey of Russian history from the earliest times until the present day. The development of a centralized autocratic state and its relationships to the major groups in the population are stressed. First term, the period prior to the nineteenth century; second term, the nineteenth and twentieth centuries. Although History 309 is not a prerequisite for 310, students who plan to take one semester only are urged to take 309 rather than 310.

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. GUERLAC.

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.

315-316. AMERICAN HISTORY. Throughout the year. Credit three hours a term. Open to sophomores. History 315 is not prerequisite to History 316. M W F 10. Mr. GATES and Assistants.

A general survey of American history from the colonial beginnings through the Civil War in the first semester and from Reconstruction to the present in the second semester.

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. MÖRNER.

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. BIGGER-STAFF.

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. BIGGER-STAFF.

A detailed survey of the modernization of Chinese civilization under the impact of the West. After a brief examination of early nineteenth-century China, the Western political, economic, and ideological invasion is considered, followed by a more thorough study of the revolutionary changes that have culminated in the People's Republic.

401. SUPERVISED READING. Either term. Credit two hours. Prerequisite: permission of the Chairman of the Department. Open only to seniors with grades of 80 or better in virtually all courses in the humanities and social sciences.

402. SUPERVISED RESEARCH. Either term. Credit four hours. Prerequisite: permission of the Chairman of the Department. Open only to seniors with grades of 80 or better in virtually all courses in the humanities and social sciences.

[431. **THE ROMAN REPUBLIC, 133-30 B.C.** Fall term. Credit four hours. Prerequisite: History 302 or consent of the instructor. M W 2-3:30. Mr. KAGAN. Not offered in 1964-1965.]

[432. **GREEK HISTORY, 500-336 B.C.** Spring term. Credit four hours. Prerequisite, History 301 or consent of the instructor. M W 2-3:30. Mr. KAGAN. Not offered in 1964-1965.]

433. THE ROMAN EMPIRE, 30 B.C.-A.D. 180. Fall term. Credit four hours. Prerequisite, History 302 or consent of the instructor. M W 2-3:30. Mr. KAGAN.

An intensive study of the political, economic, social, and intellectual history of the Roman world from the emergence of the Augustan Principate to the death of Marcus Aurelius.

434. HELLENISTIC AGE. Spring term. Credit four hours. Prerequisite, History 301-302 or consent of the instructor. M W 2-3:30. Mr. KAGAN.

The political, economic, social, and intellectual history of the Hellenistic empires from Alexander to the Roman conquest (336-146 B.C.).

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.

The structure of selected medieval institutions—e.g. the monastery, cathedral, university—and the kinds of intellectual, artistic, and literary activity associated with them.

[437. **CHURCH AND STATE DURING THE MIDDLE AGES.** Fall term. Credit four hours. Prerequisite, History 303-304 or consent of the instructor. T Th S 12. Mr. TIERNEY. Not offered in 1964-1965.]

[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 1964-1965.]

[440. **THE ITALIAN RENAISSANCE.** Fall term. Credit four hours. Prerequisite, six hours in European history or consent of the instructor. T Th S 9. Not offered in 1964-1965.]

341-342. EUROPE IN THE AGE OF THE RENAISSANCE AND REFORMATION. Throughout the year. Credit four hours a term. Prerequisite, six hours in European history or consent of the instructor. T Th S 11. Mr. ———.

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. Mr. ———.

[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 1964-1965.]

[445. **SOURCES OF EIGHTEENTH-CENTURY FRENCH HISTORY.** Fall term. Credit four hours. Prerequisite, a reading knowledge of French and permission of the instructor. T 2-5. Mr. GUERLAC. Not offered in 1964-1965.]

[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 1964-1965.]

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.

The growth of English institutions of government from the Anglo-Saxons to the end of the Middle Ages. The main emphasis is on the emergence of constitutional forms of government in the thirteenth and fourteenth centuries.

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*. Fall term. Credit four hours. Prerequisite, History 307-308 or consent of the instructor. T Th S 9. Mr. MARCHAM. Not offered in 1964-1965.]

[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 1964-1965.]

351. *EUROPE IN THE NINETEENTH CENTURY*. Fall term. Credit four hours. Prerequisite, History 102, or 106, or consent of the instructor. W F 2-3:30. 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 102, 106 or 351, or consent of the instructor. W F 2-3:30. Mr. Fox.

An intermediate-level course in European history since 1900, stressing the interaction between European politics and Europe's relations with the rest of the world. Conducted by informal lectures and discussions, it will assume a knowledge of the narrative history of the period and will require extensive reading as a basis for exercises in historical interpretation.

[551. *EVOLUTION OF THE FRENCH REPUBLIC*. Fall term. Credit four hours. A reading knowledge of French is required. Not offered 1964-1965.]

553. *THE EUROPEAN REVOLUTION, 1789-1848*. Fall term. Credit four hours. Open to seniors and graduate students with the consent of the instructor. A reading knowledge of French is required. W F 11-12:30. Mr. Fox.

A critical analysis of the great French Revolution followed by a survey of the impact of this revolution on the rest of western Europe in the

first half of the nineteenth century, particularly as manifested in the Revolutions of 1820, 1830, and 1848. A discussion course conducted at the advanced level.

[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 1964-1965.]

[356. *HISTORY OF MODERN GERMANY*. Spring term. Credit four hours. Prerequisite, six hours in European history. T Th S 10. Mr. SIMON. Not offered in 1964-1965.]

458. *INTELLECTUAL HISTORY OF EUROPE IN THE NINETEENTH CENTURY*. Spring term. Credit four hours. Prerequisite, History 351 or 444; or Government 351, or consent of the instructor. T Th 2-3:30. Mr. SIMON.

Topical studies in the origins, development, and diffusion of ideas.

461. *ECONOMIC AND SOCIAL HISTORY OF RUSSIA*. Fall term. Credit four hours. Prerequisite, History 309-310, or permission of the instructor. M 2-3, W 2-4. Mr. PINTNER.

Emphasizes the role of the peasantry throughout the entire course of Russian history, from the Kievan period to the present day. Special attention will be devoted to the various methods used by the state in the economic exploitation and political control of the population.

462. *HISTORY OF RUSSIAN FOREIGN RELATIONS FROM THE FIFTEENTH CENTURY*. Spring term. Credit four hours. Prerequisite, History 309-310 or permission of the instructor. M 2-3, W 2-4. Mr. PINTNER.

Deals with the nature of Russia's relationships with other powers, particularly with the question of to what extent these relationships have changed in the past 500 years.

466. *ORIGINS OF MODERN SCIENCE*. Spring term. Credit four hours. Prerequisite, History 311-312 or consent of the instructor. Th 2-5. Mr. GUERLAC.

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

[367-368. *SCIENCE AND THE MODERN WORLD*. Throughout the year. Credit four hours a term. Prerequisite, History 101-102 or 105-106 plus fulfillment of the science requirement, or History 311-312. M W F 2. Mr. WILLIAMS. Not offered in 1964-1965.]

469. **HISTORY OF BIOLOGY.** Fall term. Credit four hours. Prerequisite, at least a one-year course in biology or consent of the instructor. T Th S 9. Mr. LORCH.

[369-370. **SCIENCE SINCE 1850.** Throughout the year. Credit four hours a term. Prerequisite, either an intense interest in the history of modern science (see the instructor) or two years of college science. Course 369 is not prerequisite to 370. M W F 9. Mr. WILLIAMS. Not offered in 1964-1965.]

[473. **AMERICAN COLONIAL HISTORY TO 1763.** Fall term. Credit four hours. M W F 2. Mr. NETTELS. Not offered in 1964-1965.]

474. **THE AGE OF WASHINGTON, 1763-1800.** Spring term. Credit four hours. M W F 2. Mr. NETTELS.

The struggle for American independence, the making of the Constitution, the founding of the federal government, and the shaping of national policies.

475. **AMERICAN HISTORY FROM 1877 to 1912.** Fall term. Credit four hours. No prerequisite, but History 316 and Government 101 are strongly recommended as preliminaries. T Th S 9. Mr. LAFEBER.

After a brief study of the effects of Reconstruction, the course will emphasize the consolidation of business, developments in cultural and intellectual history, and the internationalization of foreign policy. There will be extensive reading assignments and papers.

377-378. **AMERICAN CULTURAL AND INTELLECTUAL HISTORY.** Throughout the year. Credit four hours a term. M W F 10. Mr. DAVIS.

The subject of this course is the interplay between historical change in America and basic beliefs and values, particularly those concerning God and man, individual liberty and the good society, the meaning of the historical past and future. The most reflective and articulate thinkers will receive more attention than public opinion in a general sense. Topics will include Puritanism and sectarianism, rationalism and philanthropic movements in the eighteenth century, the Jeffersonian synthesis, romanticism in politics and culture of the nineteenth century, the impact of evolutionary thought, ferment and reorientation in philosophy and social theory, naturalism, amorality, and erosion of the liberal faith, and the continuing search for a new synthesis. The first term is not prerequisite for the second.

478. **THE AMERICAN REFORM IMPULSE, 1800-1860.** Spring term. Credit four hours. Open to upperclassmen and graduate students. M W F 3. Mr. DAVIS.

Major emphasis will fall on abolitionism, women's rights, temperance, and prison reform. Specific reform movements will be related to changes in religion and social philosophy. Some attempt will be made to show the relevance of ante-bellum reforms to later reform movements of farmers and laborers, progressives, New Dealers, and anti-segregationists. Research paper and considerable reading in primary sources.

[379-380. **RECENT AMERICAN HISTORY.** Throughout the year. Credit four hours a term. M W F 12. Mr. GATES. Not offered in 1964-1965.]

481-482. **AMERICAN HISTORY: HISTORY OF THE WEST.** Throughout the year. Credit four hours a term. M W F 12. Mr. GATES.

Western migration, Indian policies, internal improvements, transportation, agriculture, growth of democracy and nationalism, land problems, federal and state relations. The major part of the work will be a research paper.

383-384. **HISTORY OF AMERICAN FOREIGN RELATIONS.** Throughout the year. Credit four hours a term. T Th S 11. Mr. LAFEBER.

A survey of American foreign policy, 1750 to the present. Special emphasis is placed on the domestic, economic, political, and social changes and how these changes influence the formulation of American foreign policy. The first semester covers the period to 1898. A term paper is optional for all students who receive a 75 or above on the six weeks' examination.

486. **MOTIVATIONS OF AMERICAN FOREIGN POLICY.** Spring term. Credit four hours. Prerequisite, consent of the instructor. Th 2-5. Mr. LAFEBER.

Undergraduate seminar, limited in enrollment, which studies intensively a short (ten to twenty years) period of American foreign policy, usually in the twentieth century. Special reading is also assigned for the study of American historians whose interpretations are important in foreign policy historiography. The bulk of the course consists of the writing of a long term paper.

[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. Not offered in 1964-1965.]

[488. *ARGENTINA, BRAZIL, AND CHILE IN THE TWENTIETH CENTURY*. Spring term. Credit four hours. Prerequisite, History 319-320 or consent of the instructor. M W F 11. Mr. GRAHAM. Not offered in 1964-1965.]

489. *STATE AND CHURCH IN LATIN AMERICAN HISTORY*. Fall term. Credit four hours. Prerequisite, History 319-320 or consent of the instructor. M W F 11. Mr. MÖRNER.

491-492. *MODERNIZATION OF CHINA*. Throughout the year. Credit four hours a term. Prerequisite, History 324 with grade of 85 or better or permission of the instructor; 491 prerequisite to 492. Conducted as a seminar. M 3-5. Mr. BIGGERSTAFF.

Topical study of the impact of Western civilization upon traditional China and of the changes in China during the first half of the twentieth century.

495. *SOUTHEAST ASIAN HISTORY PRIOR TO THE PERIOD OF EUROPEAN INFLUENCE*. Fall term. Credit four hours. T Th S 11. Mr. WOLTERS.

496. *SOUTHEAST ASIAN HISTORY SINCE THE FIRST ARRIVAL OF EUROPEANS*. Spring term. Credit four hours. T Th S 11. Mr. WOLTERS.

Honors Program

399. *HONORS PROSEMINAR*. Fall term. Credit two hours. Open only to juniors who have been accepted by the Department as candidates for Honors in history. W 4-6. Mr. GUERLAC.

Training and practice in the use of historical materials and in historical writing; discussion of various methods of research and various types of historical explanation. Considerable time will be devoted to the systematic composition of a term paper.

499. *HONORS GUIDANCE*. Fall term. Credit four hours. Prerequisite, History 399.

Devoted to the writing of an Honors essay under the guidance of a member of the department.

Graduate Seminars

501. *INTRODUCTION TO HISTORICAL THEORY AND PRACTICE*. Fall term. Credit four hours. Required of all entering graduate students in history (exemption may be granted

by the instructor to students who have already completed a satisfactory equivalent). Not open to undergraduates. T Th 2-4. Mr. SIMON.

Problems of historical thought, research, and writing as illustrated by historians representative of various cultures, periods and schools. Intensive supervision in the preparation of a term paper.

511-512. *SUPERVISED READING*. Throughout the year. Credit four hours a term. Hours to be arranged. For graduate students only. Staff.

631-632. *SEMINAR IN ANCIENT HISTORY*. One or two terms. Credit four hours a term. Hours to be arranged. Mr. KAGAN.

637-638. *SEMINAR IN MEDIEVAL HISTORY*. One or two terms. Credit four hours a term. Hours to be arranged. Mr. TIERNEY.

641-642. *SEMINAR IN EUROPEAN HISTORY DURING THE ERA OF THE RENAISSANCE AND REFORMATION*. One or two terms. Credit four hours a term. Hours to be arranged. Mr. ———.

647-648. *SEMINAR IN TUDOR AND STUART HISTORY*. One or two terms. Credit four hours. Hours to be arranged. Mr. MARCHAM.

651-652. *SEMINAR IN MODERN EUROPEAN HISTORY*. One or two terms. Credit four hours a term. Hours to be arranged. Mr. FOX.

657-658. *SEMINAR IN MODERN EUROPEAN HISTORY*. One or two terms. Credit four hours. Th 4-6. Mr. SIMON.

Course 658 will deal with topics in intellectual history.

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. Not offered in 1964-1965.]

671-672. *SEMINAR IN EARLY AMERICAN HISTORY*. One or two terms. Credit four hours a term. Hours to be arranged. Mr. NETTELS.

675-676. **SEMINAR IN AMERICAN CULTURAL AND INTELLECTUAL HISTORY.** One or two terms. Credit four hours a term. Hours to be arranged. Mr. DAVIS.

679-680. **SEMINAR IN THE HISTORY OF THE AMERICAN WEST.** One or two terms. Credit four hours a term. Hours to be arranged. Mr. GATES.

683. **SEMINAR IN THE HISTORY OF AMERICAN FOREIGN RELATIONS.** Fall term. Credit four hours. Hours to be arranged. Mr. LAFFER.

687-688. **SEMINAR IN LATIN AMERICAN HISTORY.** One or two terms. Credit four hours a term. Hours to be arranged. Mr. ———.

691-692. **SEMINAR IN MODERN CHINESE HISTORY.** One or two terms. Credit four hours a term. Hours to be arranged. Mr. BIGGERSTAFF.

695-696. **SEMINAR IN SOUTHEAST ASIAN HISTORY.** One or two terms. Credit four hours a term. Hours to be arranged. Mr. WOLTERS.

HISTORY OF ART

Mr. A. S. ROE, *Chairman*; Mrs. A. I. BENSON, Messrs. N. A. PATTILLO, JR., W. SMITH, J. H. TURNURE, F. O. WAAGE, M. W. YOUNG.

Students who wish to do their major work in the history of art will be expected to have completed the 103-104 or the 201-202 sequence. Those students who have taken the 103-104 sequence as freshmen and whose grades are satisfactory to the department may petition to elect courses in the 301-304 sequence, or the 305-306 sequence in their sophomore year. It is also recommended that the student should have fulfilled as part of the underclass distribution requirement one of the following year courses in European history offered by the Department of History: 105-106, 301-302 or 303-304.

In their upperclass years, the following requirements shall be met: at least thirty-two hours of courses in the history of art at the 300 or 400 level and eight additional hours at the 300 or 400 level, which may be further departmental offerings, or in some related area approved by the student's major adviser. The upperclass requirements will normally include the 305-306 sequence, if not taken in sophomore year.

A candidate for the degree of Bachelor of Arts with Honors in the history of art should apply at the departmental office not later than the first week of classes of his junior year. In order to be eligible for the Honors program, the candidate must have a cumulative average of 80 for all courses in the College and of 85 for courses in the Department of the History of Art (which will normally include one or two of the courses at the 300 level open to specially qualified sophomores). The candidate is required to complete 301-302, 303-304, 491-492, 493-494, and to offer at least eight hours of courses at the 400-level. A senior thesis and a senior comprehensive examination complete the requirements. Further information in regard to the Honors program may be obtained at the department office.

The Distribution I requirement in the Expressive Arts is satisfied in the history of art by courses 103-104, 103-204, or 201-202.

I. Introductory Courses

103-104. **INTRODUCTION TO THE ANALYSIS OF WORKS OF ART.** Throughout the year. History of Art 103 is prerequisite to History of Art 104. Credit three hours a term. M W F 10; T Th S 9, 10, 12. Mr. YOUNG and Mrs. BENSON.

An introduction to the problems of experiencing works of art. Students will meet in small groups of from fifteen to twenty for discussion and examination of works of art, largely through reproductions, in order to provide training in the techniques of visual analysis. A large part of the course will be devoted to the problems of articulation of the visual experience. Conceived as a preparation

for the study of art history, the course itself will not, however, approach works of art in the usual historical context.

May be considered as a useful preparation for the study of art history, or 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 to freshmen and sophomores only.

201-202. **INTRODUCTION TO ART.** Throughout the year. Credit three hours a term. History of Art 201 is prerequisite to History of Art 202. M W F 12. Mr. TURNURE.

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 sophomores; also to upperclass students as an elective. Students who can satisfy the department that they have had school courses equivalent to 103-104 may petition to take 201-202 as freshmen.

204. INTRODUCTION TO PAINTING AND SCULPTURE. Spring term. Credit three hours. Open to sophomore and upperclass students, except those who have had History of Art 202. T Th S 11. Preliminary examinations will be held at 7 p.m. on March 4 and April 15, 1965. Mr. PATILLO.

A survey of western European art beginning with the fourteenth century and dealing chiefly with painting.

[281. **INTRODUCTION TO ASIAN ART.** Fall term. Credit three hours. M W F 11. Mr. YOUNG. Not offered in 1964-1965.]

II. Courses at Intermediate Level

301. ART OF THE ANCIENT WORLD. Fall term. Credit four hours. M W F 9. Mr. WAAGE.

The major arts in the European Palaeolithic Age, the Near Eastern Neolithic Age, and in the Mesopotamian, Egyptian, Aegan, Hellenic, and Roman civilizations.

302. ART OF THE MIDDLE AGES. Spring term. Credit four hours. M W F 9. Mr. TURNURE.

An investigation of the arts in Europe from the beginning of Christianity to about 1400.

[303. **ART OF THE EARLY AND HIGH RENAISSANCE.** Fall term. Credit four hours. M W F 9. Mr. SMITH. Not offered in 1964-1965.]

[304. **ART OF THE SEVENTEENTH AND EIGHTEENTH CENTURIES.** Spring term. Credit four hours. M W F 9. Mr. ROE. Not offered in 1964-1965.]

The above group of courses is intended to present in some detail the major trends and monuments in the artistic development of western culture during four basic periods leading up to the present. Taken as a sequence

they will form a foundation in depth for more advanced work in specific areas. They may, however, be taken individually and as such are intended to be appropriate electives for students pursuing curricula in related areas of literature, languages, history, etc.

305-306. INTRODUCTION TO ARCHITECTURE. Throughout the year. Credit four hours a term. T Th S 9. Mr. PATILLO.

A survey of the architecture of the Western world from ancient times to the present. The first term ends with the Romanesque period; the second begins with the Gothic.

313. PREHISTORIC ART. Fall term. Credit four hours. M W F 12. Mr. WAAGE.

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 Metal 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.

Chronologically and culturally a continuation of History of Art 313 but treated primarily in terms of the painting and sculpture of Africa. Other bodies of primitive art, e.g., Australian, Eskimo, Northwest Coast, will be included to round out a consideration of the shaping and use of art forms to satisfy group needs in cultures where art was an indispensable element of everyday life.

[321. **GREEK SCULPTURE.** Fall term. Credit four hours. M W F 10. Mr. WAAGE. Not offered in 1964-1965.]

[322. **ART OF THE ROMAN EMPIRE.** Spring term. Credit four hours. M W F 10. Mr. WAAGE. Not offered in 1964-1965.]

[342. **THE ART OF THE NORTHERN RENAISSANCE.** Spring term. Credit four hours. T Th S 10. Mr. TURNURE. Not offered in 1964-1965.]

343. FLORENTINE AND CENTRAL ITALIAN PAINTING. Fall term. Credit four hours. T Th S 11. Mr. PATILLO.

A study of the major artists from Cavallini and Cimabue to Michelangelo and Raphael.

[345. **VENETIAN AND NORTH ITALIAN PAINTING.** Fall term. Credit four hours. T Th S 11. Mr. PATILLO. Not offered in 1964-1965.]

[347. **ITALIAN RENAISSANCE ARCHITECTURE.** Spring term. Credit four hours. M W F 12. Mr. SMITH. Not offered in 1964-1965.]

348. **HIGH RENAISSANCE AND MANNERISM.** Fall term. Credit four hours. M W F 9. Mr. SMITH.

Sixteenth Century painting, sculpture, and architecture, especially in Italy, but with some consideration of France, Spain, Germany, and the Netherlands.

354. **SEVENTEENTH CENTURY PAINTING.** Fall term. Credit four hours. T Th S 10. Mr. TURNURE.

A study of the major European schools and masters of the century of the Baroque.

362. **EUROPEAN PAINTING OF THE NINETEENTH CENTURY.** Fall term. Credit four hours. T Th S 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. T Th S 12. Mr. ———.

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. **INTRODUCTION TO AMERICAN ART.** Fall term. Credit four hours. T Th S 10. Mr. ROE. Not offered in 1964-1965.]

383. **ART OF CHINA.** Fall term. Credit four hours. M W F 11. Mr. YOUNG.

A survey of painting and sculpture from earliest times to the present, with some consideration of ceramics and the minor arts. The role of Buddhism, Taoism, and Confucianism in determining the aesthetic expression of China will also be discussed.

[384. **ART OF JAPAN.** Spring term. Credit four hours. M W F 11. Mr. YOUNG. Not offered in 1964-1965.]

386. **ARTS OF INDIA AND SOUTHEAST ASIA.** Spring term. Credit four hours. M W F 11. Mr. YOUNG.

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 metaphysical 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. For majors and other advanced students. Prerequisite, History of Art 201-202 or equivalent, eight hours of advanced courses in art history, consent of the instructor. Limited to twelve students. F 2-4:30. Mr. YOUNG.

A non-chronological laboratory course which will meet in the White Art Museum, dealing with original objects in all the arts. Paintings, drawings, prints, sculpture, architecture and the minor arts will be considered. Lectures, discussions, reports.

395. **ENGLISH ART.** Spring term. Credit four hours. M W F 10. Mr. ROE.

Emphasis will be focussed upon Renaissance influences in architecture and the decorative arts from Inigo Jones to Robert Adam, and also upon the work of major figures of painting from Hogarth and Reynolds to Blake.

397. **RENAISSANCE, BAROQUE, AND MODERN SCULPTURE.** Fall term. Credit four hours. M W F 11. Mr. SMITH.

A study of the main course of development of sculpture in Europe and America from fifteenth-century Italy to the present day, with emphasis in each period upon the works of a few representative artists.

III. Courses at Advanced Level

The following courses are intended primarily for seniors and graduate students; however, they will be available to juniors majoring in the department who have satisfactorily completed courses of a more specialized character than 201-202. They will also be open to other qualified upperclassmen with the consent of the instructor. Meet once a week; will require the presentation of reports and papers by all participants.

[425. **EGYPTIAN ART AND ARCHAEOLOGY.** Fall term. Credit four hours. Prerequisite, consent of the instructor. F 2-4:30. Mr. TURNURE. Not offered in 1964-1965.]

428. PROBLEMS IN ANCIENT ART AND ARCHAEOLOGY. Spring term. Credit four hours. Prerequisite, consent of the instructor. T 2-4:30. Mr. WAAGE.

Open to students who have taken one of the courses in prehistoric, primitive, or ancient art and archaeology and who wish to pursue further some specific subject or subjects in these fields.

435. GOTHIC ARCHITECTURE. Fall term. Credit four hours. Prerequisites, History of Art 305-306 and consent of the instructor. W 2-4:30. Mr. PATILLO.

446. LITERARY SOURCES IN THE ITALIAN RENAISSANCE. Spring term. Credit four hours. Prerequisite, consent of the instructor. M 2-4:30. Mr. SMITH.

Reading and interpretation of fifteenth- and sixteenth-century writings on art and artists.

448. PROBLEMS IN SIXTEENTH CENTURY ART. Spring term. Credit four hours. Prerequisite, consent of the instructor. Th 2-4:30. Mr. SMITH.

A detailed examination of a few of the main monuments, such as the Stanza della Segnatura and the Medici Chapel.

454. STUDIES IN SEVENTEENTH CENTURY ART. Spring term. Credit four hours. Prerequisite, History of Art 202 or the equivalent, and consent of the instructor. W 2-4:30. Mr. TURNURE.

An investigation of significant aspects of the visual arts in Italy and Spain from the later sixteenth century until about 1700.

[461. PROBLEMS IN THE ART OF THE NINETEENTH CENTURY. Fall term. Credit four hours. Prerequisite, History of Art 362 or 363 and consent of the instructor. Th 2-4:30. Mr. ———. Not offered in 1964-1965.]

463. PROBLEMS IN TWENTIETH CENTURY ART. Fall term. Credit four hours. Prerequisite, History of Art 362 or 363 and consent of the instructor. Open to students who have had 464. Th 2-4:30. Mr. ———.

464. PROBLEMS IN TWENTIETH-CENTURY ART. Spring term. Credit four hours. Prerequisite, History of Art 362 or 363 and consent of the instructor. Open to students who have had 463. Th 2-4:30. Mr. ———.

472. PROBLEMS IN AMERICAN ART. Fall term. Credit four hours. Prerequisite, History of Art 375 or 395 and consent of the instructor. F 2-4:30. Mr. ROE.

[483. METHODS OR RESEARCH IN ASIAN ART. Fall term. Credit four hours. Prerequisite, consent of the instructor. T 2-4:30. Mr. YOUNG. Not offered in 1964-1965.]

484. PROBLEMS IN ASIAN ART. Fall term. Credit four hours. Prerequisite, History of Art 383 or consent of the instructor. T 2-4:30. Mr. YOUNG.

Studies in selected topics. Discussions and reports.

[485. CHINESE PAINTING: THE FIRST MILLENIUM. Fall term. Credit four hours. Prerequisite, History of Art 383 or consent of the instructor. T 2-4:30. Mr. YOUNG. Not offered in 1964-1965.]

[486. CHINESE PAINTING: THE LATER CENTURIES. Spring term. Credit four hours. Prerequisite, History of Art 383 or History of Art 485, or the consent of the instructor. T 2-4:30. Mr. YOUNG. Not offered in 1964-1965.]

Archaeology

Students who are interested in archaeology are directed to History of Art 201 and 301, and especially to 313, 314, 321, 322, and 425, all of which include archaeological material. The following specialized courses treat specific excavational material and procedures, and are therefore open only to a limited number of students who have some background in ancient history, ancient languages, anthropology, or art history. (See also listings under Anthropology.)

[421. NUMISMATICS. Fall term. Credit four hours. Prerequisite, consent of the instructor. T 2-4:30. Mr. WAAGE. Offered in 1965-1966 and alternate years.]

423. CERAMICS AND THE TECHNIQUES OF EXCAVATION. Fall term. Credit four hours. Prerequisite, consent of the instructor. T 2-4:30. Mr. WAAGE. Offered in 1964-1965 and alternate years.

Pottery specimens will be studied to provide some experience in one of the basic prerequisites of archaeological excavation—the identification of types of pottery. Reports on the use of ceramics and other material for dating and on the technique of conducting excavations.

Honors

491-492. HONORS WORK (juniors). Throughout the year. Credit four hours a term. Pre-

requisite, provisional acceptance as a candidate for Honors. Hours to be arranged.

Independent work; preparation of papers.

493-494. HONORS WORK (seniors). Throughout the year. Credit four hours a term. Prerequisite, History of Art 492. Hours to be arranged.

Preparation of a senior thesis.

Graduate Study

591-592. GRADUATE STUDY. Throughout the year. Credit four or more hours a term. Open only to graduate students.

LITERATURE

Mr. B. E. PIKE, *Chairman*; MESSRS. R. M. ADAMS, B. B. ADAMS, E. A. BLACKALL, H. CAPLAN, A. CAPUTI, MISS PATRICIA CARDEN, MESSRS. M. A. CARLSON, P. M. DE MAN, J.-J. DEMOREST, R. M. DURLING, J. M. ECHOLS, S. B. ELLEDGE, E. G. FOGEL, J. FRECCERO, K. FREDERICK, G. GIBIAN, D. I. GROSSVOGEL, T. F. GOULD, M. HORWITZ, J. HUTTON, H. P. KAHN, R. E. KASKE, G. M. KIRKWOOD, G. A. MCCALMON, E. P. MORRIS, I. RABINOWITZ, H. SHADICK, W. D. SHAW, T. W. STOEHR, H. A. WICHELNS.

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

201-202. MASTERPIECES OF WESTERN LITERATURE. Throughout the year. Credit three hours a term. For sophomores and a limited number of freshmen; registration limited to 200 students. M W F 9, 10, 11; T Th S 9, 10, 11. Mr. SHAW and others.

Informal discussions of selected great books of the Western tradition. Fall term: *The Iliad*, *The Book of Job*, selected Greek tragedies, *The Aeneid*, *The Divine Comedy*, selected medieval romances, *King Lear*. Spring term: *Don Quixote*, *Paradise Lost*, selected plays of Molière, *Faust*, poems of Keats, *Madame Bovary*, short stories of Chekhov and Mann, poems of Yeats.

205. THE LITERATURE OF THE OLD TESTAMENT. Fall term. Credit three hours. For sophomores and upperclassmen. M W F 9. Mr. RABINOWITZ.

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

[**206. THE LITERATURE OF POST-EXILIC JUDAISM.** Spring term. Credit three hours. For sophomores and upperclassmen. M W F 9. Mr. RABINOWITZ. Not offered in 1964-1965.]

218. CLASSIC MYTHS. Spring term. Credit three hours. For sophomores and upperclassmen. T Th S 10. Mr. KIRKWOOD.

The principal cycles of Greek mythology—for example, the myths of the gods, the Trojan Cycle, the Argive and Theban Cycles—with special emphasis on their representation in literature. Anthropological aspects of the myths and their background in prehistory. Lectures will be illustrated from the collection of slides in the possession of the Department of Classics.

221-222. MASTERPIECES OF RUSSIAN LITERATURE. Throughout the year. Credit three hours a term. First term prerequisite to the second. M W F 12. Miss CARDEN.

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

301-302. DRAMA AND THE THEATRE. Throughout the year. Credit four hours a term. Students with specialized interest in drama or the theatre should elect this course, preferably as early as the sophomore year. M W F 11. Fall term, Mr. CARLSON. Spring term, Mr. MCCALMON.

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

303-304. THE LITERATURE OF EUROPE. Throughout the year. Credit four hours a term. T Th S 10. Fall term, Mr. B. B. ADAMS. Spring term, Mr. FREDERICK.

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

305-306. ENGLISH TRANSLATIONS OF GREEK AND LATIN CLASSICS. Throughout the year. Credit four hours a term. First term prerequisite to the second. For upperclassmen only. T 2-4 or Th 2-4 and an hour to be arranged. 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.

307. FOUNDATIONS OF WESTERN THOUGHT. Fall term. Credit four hours. For sophomores and upperclassmen. T Th S 11. Mr. GOULD.

The beliefs and ideas—religious, moral, social, and scientific—that were current or advanced in the Greek, Roman, and Early Christian period of Western civilization; the history of these ideas and their integration into coherent bodies of thought. Popular thought and practices as well as the ideas of leading thinkers and poets. The influence of these ideas on later thought and their relation to present-day problems. Reading of representative material in translation. Lectures and discussion.

309-310. THE MODERN EUROPEAN NOVEL. Throughout the year. Credit four hours a term. M W F 12. Fall term, Mr. STOEHR. Spring term, Mr. MORRIS.

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

311. THE RUSSIAN NOVEL. Fall term. Credit four hours. T Th S 9. Mr. GIBIAN. Works by Gogol, Goncharov, Turgenev, Dostoevsky, and Tolstoy.

312. SOVIET LITERATURE. Spring term. Credit four hours. M W F 10. Mr. HORWITZ. An introduction to selected works of Russian literature, from 1917 to date, examined as social and historical documents and as works of art.

314. HUMANISM AND THE RENAISSANCE. Spring term. Credit four hours. M W F 10. Mr. HUTTON.

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.

315-316. MEDIEVAL LITERATURE. Throughout the year. Credit four hours a term. T Th S 10. Fall term, Mr. KASKE; spring term, Mr. FRECCERO.

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

[318. SOUTHEAST ASIAN LITERATURE IN TRANSLATION. Spring term. Credit three hours. T 2-4. Mr. ECHOLS. Not offered in 1964-1965.]

[321. CHINESE HISTORICAL AND PHILOSOPHICAL LITERATURE IN TRANSLATION. Fall term. Credit three hours. M W F 10. Mr. SHADICK. Not offered in 1964-1965.]

322. CHINESE IMAGINATIVE LITERATURE IN TRANSLATION. Spring term. Credit three hours. M W F 10. Mr. SHADICK.

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

329. FORM AND EXPRESSION IN THE ARTS OF THE TWENTIETH CENTURY. Fall term. Credit four hours. T Th S 10. Mr. KAHN.

A study of the positions on which modern schools of art and literature base their work. Cubist, Expressionist, and Surrealist modes of expression and technique in their relation to the condition of our time.

330. IDEA AND FORM IN TWENTIETH-CENTURY EUROPEAN LITERATURE. Spring term. Credit four hours. T Th S 10. Mr. GIBIAN.

Study of individual works by Kafka, Joyce, Malraux, and others. Thematic and formal preoccupations of twentieth-century European authors.

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*.

[405. THEORY AND PRACTICE OF TRANSLATION. Fall term. Credit three hours. M W 11. Mr. R. ADAMS. Not offered in 1964-1965.]

[407. VARIATIONS ON A LITERARY THEME. Fall term. Credit four hours. M W 11. Mr. R. ADAMS. Not offered in 1964-1965.]

[409. POST-SYMBOLIST POETRY. Fall term. Credit four hours. M W F 10. Mr. DE MAN. Not offered in 1964-1965.]

411. MODERN GERMAN LITERATURE. Spring term. Credit four hours. M W F 11. Mr. PIKE.

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

501-502. TOPICS IN COMPARATIVE LITERATURE. Throughout the year. Credit four hours a term. Primarily for graduate students in comparative literature. Hours to be arranged. Mr. DE MAN.

Fall term: Romantic autobiography (Rousseau, *Confessions*; Wordsworth, *The Prelude*; Senancour, *Obermann*). Spring term: to be announced.

MYTH IN THE THEATER. (See French 460.)

MATHEMATICS

Mr. P. OLUM, *Chairman*; Messrs. R. P. AGNEW, J. B. AX, I. BERSTEIN, R. A. BONIC, S. U. CHASE, C. R. CURJEL, R. H. FARRELL, W. FEIT, W. H. J. FUCHS, H. H. GERSHENSON, R. GREENBLATT, L. GROSS, H. GUNJI, C. S. HERZ, R. G. HEYNEMAN, P. J. HILTON, G. A. HUNT, A. R. JONES, H. KESTEN, J. KIEFER, S. KOCHEN, G. R. LIVESAY, A. NERODE, G. S. RINEHART, J. B. ROBERTSON, A. ROSENBERG, G. E. SACKS, J. E. SKEATH, F. L. SPITZER, C. J. STONE, S. WAINGER, R. J. WALKER, H. WIDOM, J. A. WILLIAMSON, J. WOLFOWITZ.

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.

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.) Prerequisites: (a) 221-222, (b) Physics 207-208. Requirements: (a) 421, 422, (b) 331, 332 or 431-432, (c) an approved 8-hour sequence in statistics, numerical analysis, or advanced differential equations, (d) at least 8 additional hours of courses numbered 300 or above in mathematics or a physical science.

Option III. (For prospective secondary school teachers.) Prerequisites: (a) 214 or 221, (b) 200, (c) Physics 101-102, or 201-202, or 207-208. Mathematics requirements: (a) 331, 332, (b) 451-452, (c) at least 4 additional hours of mathematics courses numbered above 300. (Mathematics 371 is recommended but not required.) Education requirements: Education 130A and 130M. (Students planning to teach in secondary schools should make themselves familiar with the New York State requirements.)

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.

The Department will grant, on the basis of examination, credit for 111 or 191 to entering freshmen who demonstrate a high level of proficiency in elementary calculus as covered in many

high schools. Entering freshmen with a high level of proficiency in all of elementary calculus may be granted credit for 122 or 192 in addition to 111.

In exceptional cases prerequisites to a course may be waived by written consent of the Department.

There are two basic underclass calculus sequences: 111-112-213-214 and 111-122-221-222. Students who plan to do upperclass work in mathematics are advised to take the latter sequence. There are other special purpose sequences such as 191-192-293-294 and 201-202.

Some one-year sequences change level from one term to the next, e.g. 325-426 and 371-472. Subject matter is indicated by the second digit thus: 0 general; 1,2 analysis; 3,4 algebra; 5,6 geometry; 7 statistics; 8 logic; 9 other.

The Distribution I requirement in mathematics is satisfied with any six hours in mathematics.

General

101-102. SELECTED TOPICS IN MATHEMATICS. Throughout the year. Credit three hours a term. First term prerequisite to second. M W F 9, T Th S 9. MESSRS. WAINGER and CURJEL.

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, 122 or, with consent of the instructor, 112. T Th S 9. MR. SKEATH.

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. MR. ———.

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 3. MR. ———.

Presentation by students of material in mathematical literature. Required of all graduate students majoring in mathematics.

Calculus

111. CALCULUS. Either term. Credit three hours. Fall term: lectures, M W F 10, 11; T Th S 10, 11 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. on Oct. 27, Dec. 1, and Jan. 12.

Plane analytic geometry, differentiation and integration of algebraic and trigonometric functions, applications. In the fall term, one of the three lectures each week will be of a special character, devoted to a more rigorous approach to the calculus.

112. CALCULUS. Either term. Credit three hours. Prerequisite, 111. Fall term: M W F 9, 10; T Th S 9, 10. Spring term: lectures M W 10, 11; T Th 10, plus one hour to be arranged.

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, M W 11; T Th 10, plus one hour to be arranged. Spring term: M W F 8, 10.

Vector spaces, linear dependence and determinants, linear differential equations, matrices and linear transformations, systems of linear equations and row reduction of matrices. Vector functions, partial derivatives.

214. CALCULUS. Either term. Credit three hours. Prerequisite 213. Fall term: T Th S 11. Spring term: T Th S 10.

Vector differential calculus, maxima and minima, solid analytic geometry, Taylor series, multiple integrals.

122. CALCULUS. Either term. Credit three hours. Prerequisite, a grade of 85 or better in 111 plus satisfactory performance (in homework and examinations) on the rigorous material of the special weekly lecture of 111 described above. (For fall term, admission by

consent of the Department.) Fall term: M W F 11, T Th S 9. Spring term: M W F 10, 11; T Th S 9, 10. Covers content of 112 in more detail.

221. CALCULUS. Either term. Credit four hours. Prerequisite, grade of 80 or better in 122. Fall term: M W F 8, 10; T Th 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, plus one hour to be arranged. 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 411H-412H. Hours to be arranged.

191. CALCULUS FOR ENGINEERS. Either term. Credit four hours. Fall term: lectures, M W F 9, 11 plus recitation periods to be arranged. Spring term: M W F 11 plus fourth hour to be arranged.

Plane analytic geometry, differential and integral calculus, applications.

192. CALCULUS FOR ENGINEERS. Either term. Credit four hours. Prerequisite, 191. Fall term: M W F 9, 11 plus fourth hour to be arranged. Spring term: lectures, M W F 9, 11 plus recitation periods to be arranged.

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 8, 12 plus fourth hour to be arranged.

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 12, Spring term: lectures, M W F 8, 12 plus recitation periods to be arranged.

Linear differential equations, quadratic forms and eigenvalues, differential vector calculus, applications.

201-202. MATHEMATICS FOR SOCIAL SCIENTISTS. Throughout the year. Credit four hours a term. Prerequisite, upperclass standing. First term prerequisite to second. M W F 11. Mr. SACKS.

A treatment of calculus and other topics of interest to social scientists. This course will not prepare the student to continue in mathematics beyond the 400 level.

Applied Mathematics

215-216. HIGHER CALCULUS. Throughout the year. Credit three hours a term. Prerequisite, 214. First term prerequisite to second. T Th S 10. Mr. BONIC.

Primarily for students who have not had 222. Partial differentiation, multiple and line integrals, vector algebra (including matrices) and vector analysis, Fourier series, partial differential equations, complex variables, Laplace transforms. Emphasis is placed on a wide range of formal applications of the calculus rather than on the logical development.

421. APPLIED MATHEMATICS. Fall term. Credit four hours. Prerequisite, 222 or consent of the instructor. M W F 12, Th 2. Mr. WINOM.

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. WINOM.

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. WILLIAMSON.

Linear operators and integral equations. Calculus of variations. Application to eigenvalue problems. Green's function, and treatment of special problems of mathematical physics.

325. INTRODUCTORY NUMERICAL ANALYSIS. Fall term. Credit four hours. Prerequisite, 222 or 294. M W F 9. Mr. WALKER.

The elements of modern numerical computations, including interpolation, numerical differentiation and integration, and the solution of linear and nonlinear ordinary differential equations. The facilities of the Cornell Computing Center are available to the students and problems will be run on the computer.

426. TOPICS IN NUMERICAL ANALYSIS. Spring term. Credit four hours. Prerequisite, 325, and consent of the instructor. M W F 9. Mr. WALKER.

Topics in numerical analysis selected from such fields as linear algebra, linear programming, polynomial approximation, and ordinary and partial differential equations.

415-416. MATHEMATICAL METHODS IN PHYSICS. Throughout the year. Credit four hours a term. Prerequisites, a good knowledge of the techniques of the calculus, such as given by 215-216 and at least two years of general physics. First term prerequisite to second. T W Th F 12. Mr. SPITZER.

For mature students who wish to acquire a wide background of mathematical techniques in one year. Lectures and problem work designed to give a working knowledge of the principal mathematical methods used in advanced physics. Topics include infinite series, Fourier series and integrals, Laplace transforms, complex variables, calculus of variations, matrices, integral equations, and eigenvalue problems.

427-428. ADVANCED DIFFERENTIAL EQUATIONS. Throughout the year. Credit four hours a term. Prerequisite, 421. M W F 12. Mr. AGNEW.

Existence theorem and basic theory of ordinary differential equations. Selected topics from partial differential equations, including various methods of obtaining approximations to solutions.

[525. **ADVANCED NUMERICAL ANALYSIS.** Credit four hours. Prerequisite, 426. Not offered in 1964-1965.]

Analysis

411-412. INTRODUCTION TO ANALYSIS. Throughout the year. Credit four hours a term. Prerequisite, 222. T Th S 10. Mr. AGNEW.

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.

411H-412H. INTRODUCTION TO ANALYSIS. Honors section of 411-412. Throughout the year. Credit four hours a term. Prerequisites, consent of the instructor and 222 or simultaneous registration in 221H-222H. T Th S 10. Mr. SKEATH.

413. INTRODUCTION TO THE THEORY OF FUNCTIONS OF ONE COMPLEX VARIABLE. Fall term. Credit four hours. Prerequisite, 411-412. M W F 9. Mr. GUNJI.

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.

512. REAL VARIABLES. Spring term. Credit four hours. Prerequisites, 411 and 500. M W F 2. Mr. ROBERTSON.

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.

513. COMPLEX VARIABLE THEORY. Fall term. Credit four hours. Prerequisites, 412 and 413, or consent of the instructor. M W F 2. Mr. BERSTEIN.

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.

611-612. SEMINAR IN ANALYSIS. Throughout the year. Credit four hours. Prerequisite, consent of the instructor which must be secured in writing before registration in either term. Hours to be arranged. Messrs. KESTEN and GROSS.

613. FUNCTIONAL ANALYSIS. Fall term. Credit four hours. Prerequisites, 432, 512. Hours to be arranged. Mr. WIDOM.

Topological vector spaces, Banach and Hilbert spaces, Banach algebras, the spectral theorem. If time permits, topological groups.

615. FOURIER ANALYSIS. Spring term. Credit four hours. Prerequisites, 512 and

either 413 or 415-416. Hours to be arranged. Mr. WAINGER.

Classical theory of Fourier series and integrals; connections with harmonic functions and functions of a complex variable. Interpolation theorems of M. Riesz and Marcinkiewicz. The Calderon-Zygmund theory of singular integrals.

619. **PARTIAL DIFFERENTIAL EQUATIONS.** Fall term. Credit four hours. Prerequisites, 512 and 613 or consent of instructor. Hours to be arranged. Mr. GROSS.

Classification of partial differential equations. Selections from the principle existence and uniqueness results for elliptic, hyperbolic and parabolic differential equations.

[614. **INTEGRAL EQUATIONS.** Fall term. Credit four hours. Prerequisite, 413. Not offered in 1964-1965.]

[617. **ANALYTIC NUMBER THEORY.** ——— term. Credit four hours. Prerequisite, 511. Not offered in 1964-1965.]

[621. **MEROMORPHIC FUNCTIONS.** ——— term. Credit four hours. Prerequisite, 411. Not offered in 1964-1965.]

[622. **RIEMANN SURFACES.** ——— term. Credit four hours. Prerequisites, 511, 530 and 550. Not offered in 1964-1965.]

[623. **SEVERAL COMPLEX VARIABLES.** Spring term. Credit four hours. Prerequisite, 411. Not offered in 1964-1965.]

[625. **ERGODIC THEORY.** Fall term. Credit four hours. Prerequisite, 512. Not offered in 1964-1965.]

[627. **CALCULUS OF VARIATIONS.** ——— term. Credit four hours. Prerequisites, 500 and 550. Not offered in 1964-1965.]

Algebra

331. **LINEAR ALGEBRA.** Fall term. Credit four hours. Prerequisites, either 221 or 200 and 213. M W F 10. 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. KESTEN.

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. Mr. CHASE.

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. RINEHART.

Finite groups, rings and fields, tensor algebra, Galois theory.

631-632. **SEMINAR IN ALGEBRA.** Throughout the year. Credit four hours. Prerequisite, consent of the instructor, which must be secured in writing before registration in either term. Hours to be arranged. Mr. ROSENBERG.

633. **GROUP THEORY.** Spring term. Credit four hours. Prerequisite, 639. Hours to be arranged. Mr. FERR.

The structure of groups of Lie type over arbitrary fields. Special emphasis on the case of finite fields.

635. **THEORY OF RINGS.** Fall term. Credit four hours. Prerequisite, 531. Hours to be arranged. Mr. AX.

A study of the two main classes of rings: (1) rings with minimum condition, including the standard theory of semi-simple rings, the Wedderburn theorems and Brauer groups; (2) commutative rings, including local rings, noetherian rings (primary decomposition) and some indication of the Grothendieck reformulation of commutative ring theory.

637. **ALGEBRAIC NUMBER THEORY.** Spring term. Credit four hours. Prerequisite, 531. Hours to be arranged. Mr. JONES.

Valuations and extensions of valuations. Ideal theory. Factorization of ideals in field extensions. Finiteness of the class number. The unit theorem.

639. **LIE ALGEBRAS.** Fall term. Credit four hours. Prerequisite, 531 or consent of instructor. Hours to be arranged. Mr. FERR.

Topics to be covered include the theorems of Lie and Engel, structure of complex semi-simple Lie algebras and their classification.

[641. **HOMOLOGICAL ALGEBRA.** Spring term. Credit four hours. Prerequisite, 531. Not offered in 1964-1965.]

Geometry and Topology

451-452. **CLASSICAL GEOMETRIES.** Throughout the year. Credit four hours a term. Prerequisite, 331 or 431, which may be taken concurrently. First term prerequisite to second. T Th S 11. Mr. GUNJI.

Synthetic and analytic methods in affine, projective, and Euclidean geometry. The emphasis will be placed on the rigorous development of geometric systems from sets of axioms.

454. **INTRODUCTION TO DIFFERENTIAL GEOMETRY.** Spring term. Credit four hours. Prerequisite, 222. M W F 9. Mr. HUNT.

The theory of manifolds and differential forms, together with their application in the geometry of curves and surfaces.

500. **FOUNDATIONS OF MATHEMATICS.** Fall term. Credit four hours. Prerequisite, 412. M W F 3. Mr. ———.

Topics in general topology, including set theory, topological spaces, mappings, product spaces, metrization theorems, topological groups, etc. Applications to functional analysis.

551. **INTRODUCTION TO ALGEBRAIC TOPOLOGY.** Spring term. Credit four hours. Prerequisites, 432 and 500. T Th 2-3:30. Mr. GERSHENSON.

Homology and cohomology theories of complexes, singular theory, fundamental group and introduction to homotopy theory, manifolds, geometric applications.

651-652. **SEMINAR IN TOPOLOGY.** Throughout the year. Credit four hours. Prerequisite, consent of the instructor, which must be secured in writing before registration in either term. Hours to be arranged. Messrs. LIVESAY and GREENBLATT.

653-654. **HOMOLOGY THEORY.** Throughout the year. Credit four hours a term. Prerequisites, 531 and 551. Hours to be arranged. Mr. HILTON.

Cohomology ring, cohomology operations, functional operations. Homotopy groups, exact sequences, homotopy operations, Hopf invariant. Spectral sequences, applications to calculation of homotopy groups and extraordinary cohomology theories.

663. **MANIFOLDS.** Fall term. Credit four hours. Prerequisite, 551 and basic notions of general topology and algebra. Hours to be arranged. Mr. BERSTEIN.

Differentiable manifolds, embedding theorems, bundles, tangent bundles, riemannian metrics, Poincare duality, characteristic classes.

[352. **ELEMENTARY TOPOLOGY.** Spring term. Credit four hours. Prerequisite, 122 or 200. Not offered in 1964-1965.]

[655-656. **HOMOTOPY THEORY.** Throughout the year. Credit four hours a term. Prerequisite, 551, first term prerequisite to second. Not offered in 1964-1965.]

[667. **ALGEBRAIC GEOMETRY.** Fall term. Credit four hours. Prerequisites, 422, 432. Not offered in 1964-1965.]

[669. **LIE GROUPS.** ——— term. Credit four hours. Prerequisites, 512 and 550. Not offered in 1964-1965.]

Probability and Statistics

371. **ELEMENTARY MATHEMATICAL STATISTICS.** Fall term. Credit four hours. Prerequisite, 113, or 221, or 202. M W F 12. Mr. KIEFER. Preliminary examinations to be scheduled on three Wednesday evenings.

Topics in probability which are essential to an understanding of statistics; introduction to the mathematical principles underlying modern statistical inference. Emphasis on the rationale underlying the choice of statistical methods in various situations.

472. **STATISTICS.** Spring term. Credit four hours. Prerequisites, 113, 371, and consent of the instructor. M W F 11. Mr. KIEFER.

A deeper discussion of the topics of 371 from a more advanced point of view.

571. **PROBABILITY.** Fall term. Credit four hours. Prerequisite, 411 or, with consent of the instructor, 416 or 421. M W F 12. Mr. WOLFOWITZ.

Fundamentals. Combinatorial problems. Distribution functions in one or several dimensions. Important probability laws. Expectation, moments, and characteristic functions. Stochastic convergence and the law of large numbers. The central limit theorem.

572. **STATISTICAL INFERENCE.** Spring term. Credit four hours. Prerequisite, 571. M W F 12. Mr. WOLFOWITZ.

Introduction to the theory of point estimation. Consistency, efficiency, and sufficiency; the method of maximum likelihood. The classical tests of hypotheses and their power. The theory of confidence intervals. The basic concepts of statistical decision theory. The fundamentals of sequential analysis.

Intended to furnish a rigorous introduction to mathematical statistics, the course is prerequisite to all advanced courses in statistics.

574. ADVANCED PROBABILITY. Spring term. Credit four hours. Prerequisite, 571. M W F 11. Mr. WILLIAMSON.

An introduction to Markov chains, emphasizing ergodic theorems, absorption problems, recurrence criteria. Applications to recurrent events, processes with independent increments, birth and death processes, stressing connections with harmonic analysis and differential equations.

671-672. SEMINAR IN STATISTICS. Throughout the year. Credit four hours. Prerequisite, consent of the instructor, which must be secured in writing before registration in either term. M 4-6. Mr. WOLFOWITZ.

673. ANALYSIS OF VARIANCE. Fall term. Credit four hours. Prerequisite, 572. Hours to be arranged. Mr. FARRELL.

The classical univariate and multivariate normal procedures. Invariance, minimax and admissibility results. Ranking problems. Other models. Nonparametric methods.

674. DESIGN OF EXPERIMENTS. Spring term. Credit four hours. Prerequisite, 573. Hours to be arranged. Mr. FARRELL.

Algebraic and geometric construction of the classical balanced block designs. Optimum design theory. Sequential designs.

677. STOCHASTIC PROCESSES. Fall term. Credit four hours. Prerequisite, 512 or 574. Hours to be arranged. Mr. SPITZER.

General stochastic processes; Markov processes; selected topics from diffusion processes, processes with independent increments, and stationary processes.

[575. **INFORMATION THEORY.** Fall term. Credit four hours. Prerequisite, 411, or with consent of the instructor, 416 or 421. Not offered in 1964-1965.]

[675. **STATISTICAL ESTIMATION.** Fall term. Credit four hours. Prerequisite, 572. Not offered in 1964-1965.]

[676. **DECISION FUNCTIONS.** Spring term. Credit four hours. Prerequisite, 675. Not offered in 1964-1965.]

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. Messrs. SACKS and NERODE.

A study of elementary and advanced topics in mathematical logic. Theorems of Herbrand, Gentzen, Church and Gödel on provability and undecidability. Theory of recursive functions and recursively enumerable sets.

681-682. SEMINAR IN LOGIC. Throughout the year. Credit four hours a term. Prerequisite, consent of the instructor. Hours to be arranged. Mr. KOCHEN.

685. METAMATHEMATICS. Spring term. Credit four hours. Prerequisite, 482. Hours to be arranged. Mr. SACKS.

[683. **THEORY OF MODELS.** ——— term. Credit four hours. Prerequisite, 582. Not offered in 1964-1965.]

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. E. A. Blackall, 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 LITERATURE, Mr. J.-J. Demorest, Chairman
Courses in French literature, Italian literature, and Spanish literature. See separate language headings for course listings and information about major programs.

DEPARTMENT OF RUSSIAN LITERATURE, Mr. G. Gibian, Chairman
Courses in Russian literature.

Burmese

Mr. R. B. JONES, JR., and Staff.

101-102. ELEMENTARY COURSE. Throughout the year. Credit six hours a term. Hours to be arranged.

201-202. BURMESE READING. Throughout the year. Credit three hours a term. Prerequisite for 201, Qualification in Burmese; for 202, Burmese 201 or consent of the instructor. Hours to be arranged. Mr. JONES.

203-204. COMPOSITION AND CONVERSATION. Throughout the year. Credit three hours a term. Prerequisite for 203, Qualification in Burmese; for 204, Burmese 203 or consent of the instructor. Hours to be arranged. Mr. JONES.

301-302. ADVANCED BURMESE READING. Throughout the year. Credit four hours a term. Prerequisite, Burmese 201-202 or the equivalent. Hours to be arranged. Mr. JONES.

Selected readings in Burmese writings in various fields.

Chinese

Messrs. N. C. BODMAN, F. C. CHIN, H. HENNE, Miss HARRIET MILLS, Mrs. PEI SHIN NI, Mr. H. SHADICK, and Staff.

For a major involving Chinese studies, see Department of Asian Studies.

101-102. ELEMENTARY CHINESE. Throughout the year. Credit six hours a term. M W 8 and daily at 12 or T Th 9 and daily at 8.

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. Miss MILLS.

213. INTRODUCTION TO CLASSICAL CHINESE. Fall term. Credit three hours. Prerequisite, Qualification in Chinese. M W F 11. Mr. SHADICK.

Systematic analysis of basic patterns in classical Chinese; study of texts; exercises in composition. An introduction to the literary style, primarily for students intending to work in classical literature, history, or art history.

221-222. ELEMENTARY HOKKIEN CHINESE. Throughout the year. Credit three hours a term. Prerequisite, Qualification in Chinese and consent of the instructor. Hours to be arranged. Mr. BODMAN.

301-302. INTERMEDIATE CHINESE II. Throughout the year. Credit four hours a term. Prerequisite, Chinese 202 or equivalent. M T W Th F 11. Miss MILLS and Mr. SHADICK.

Readings and drill in modern expository Chinese, three hours; introduction to classical Chinese, two hours. This latter is intended to prepare students of modern Chinese to understand classical forms and quotations occurring in vernacular texts and to use dictionaries and reference works.

312. INTERMEDIATE CLASSICAL CHINESE. Spring term. Credit three hours. Prerequisite, Chinese 213 or 301. M W F 11. Mr. SHADICK.

Study of texts in a variety of styles, ancient and modern.

313. CHINESE HISTORICAL AND PHILOSOPHICAL TEXTS. Fall term. Credit four hours. Prerequisite, Chinese 302 or 312 or consent of the instructor. T Th 11 and one hour to be arranged. Mr. SHADICK.

Selections from the standard histories, the classical philosophers, and early modern reformers.

402. HISTORY OF THE CHINESE LANGUAGE. Spring term. Credit four hours. Prerequisite, consent of the instructor. Hours to be arranged. Mr. BODMAN.

403. LINGUISTIC STRUCTURE OF CHINESE. Fall term. Credit four hours. Prerequisite, consent of the instructor. Hours to be arranged. Mr. BODMAN.

411-412. ADVANCED READINGS IN MODERN CHINESE. Throughout the year. Credit four hours a term. Prerequisite, Chinese 302. Hours to be arranged.

[**414. CLASSICAL CHINESE PROSE.** Spring term. Credit four hours. Prerequisite, consent of the instructor. Hours to be arranged. Mr. SHADICK. Not offered in 1964-1965.]

416. CLASSICAL CHINESE POETRY AND DRAMA. Spring term. Credit four hours. Prerequisite, consent of the instructor. Hours to be arranged. Mr. SHADICK.

An introduction to the forms of Chinese poetry.

571-572. SEMINAR IN CHINESE LITERATURE. Throughout the year. Credit and hours to be arranged. Mr. SHADICK.

SINO-TIBETAN LINGUISTICS. (See Linguistics 575-576.)

Czech

Mr. R. L. LEED.

221-222. **ELEMENTARY COURSE.** Throughout the year in alternate years. Credit three hours a term. Prerequisite, Qualification in Russian and consent of the instructor. Hours to be arranged.

Dutch

Mr. J. M. ECHOLS.

[151-152. **ELEMENTARY GRADUATE READING COURSE.** Throughout the year. Credit three hours a term. Not offered in 1964-1965.]

English as a Second Language

The following two courses are offered by the Division of Modern Languages. Foreign students should consult a member of that Division at Morrill Hall 108.

102. **ENGLISH AS A SECOND LANGUAGE.** Fall term. Credit six hours. Prerequisite, placement by the instructor. Hours to be arranged.

211-212. **ENGLISH AS A SECOND LANGUAGE.** Throughout the year. Credit three hours a term. Prerequisite, placement by the instructor. M W F 11.

French

MESSRS. A. ADAMOV, G. BROGANYI, G. L. BURSILL-HALL, Miss ALICE COLBY, MESSRS. P. DE MAN, J.-J. DEMOREST, E. J. GEARY, D. I. GROSSVOGEL, R. A. HALL, JR., R. L. HINSHALWOOD, C. S. LEONARD, JR., E. P. MORRIS, MRS. JEAN PARRISH, MESSRS. B. L. RIDEOUT, A. SEZNEC, and Staff.

Students who elect to major in French should have completed French 201-202 and French 203-204, and they should consult the departmental advisers, Mr. Seznec and Mr. Geary, as soon as possible.

For completion of a major, French 382 or its equivalent must be successfully completed, and twenty-eight hours of French literature courses selected from 300 and 400 courses, with papers to be written in French. At least one term of a seminar must be included. One term of the following courses: French 401, 402, 403, may be substituted for four hours of the twenty-eight required in French literature (but not for the

required semester of a seminar). One four-hour course offered by the Division of Literature may be accepted toward the twenty-eight required hours in French literature if prior approval has been obtained from the major adviser.

No specific number of related courses will be required. The student will work out a coordinated program with the help of his adviser. It is expected that one quarter to one third of the student's time spent outside the major field will be the equivalent of a minor.

The requirements for Honors are similar to those of the major except that the student must (1) have an average grade of 85 in French courses; (2) write a thesis (essay) in French in his senior year; (3) take a general comprehensive examination at the end of his senior year. He may be released from one course during either term of his senior year to write his thesis. Provisions will be made for students in the Junior Year Abroad programs to prepare for Honors.

The Distribution I requirement in the Humanities is satisfied in French by French 201-202 if this course is not used in fulfillment of the language requirement.

101. **ELEMENTARY COURSE.** Either term. Credit six hours. Fall term: drill, daily at 8, 10, 11, or 12; lecture, M W 10 or T Th 2. Spring term: drill, daily at 8; lecture, T Th 2.

102. **ELEMENTARY COURSE.** Either term. Credit six hours. Prerequisite, French 101 or its equivalent. Students who have previously studied French should consult page 16 before registering for this course. Drill, daily at 8, 9, 10, 11, or 12. Lectures: fall term, M W 8 or T Th 9 or 2; spring term, W F 11 or M W 3 or T Th 8.

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; lecture T 9 or F 10. Spring term: drill M W F 11 or T Th S 10; lecture T 9.

151. **ELEMENTARY GRADUATE READING COURSE.** Either term. Credit three hours. Open only to graduate students. M W F 4:30 or 7.

Designed to help students prepare for the Graduate Reading Examination administered by the Graduate School.

152. **ELEMENTARY GRADUATE READING COURSE.** Either term. Credit three hours. Open only to graduate students. Prerequisite, French 151 or one year of college French or

two years of high school French. M W F 4:30 or 7.

Designed to help students prepare for the Graduate Reading Examination administered by the Graduate School.

201-202. INTRODUCTION TO FRENCH LITERATURE. Throughout the year. Credit three hours a term. Prerequisite, Qualification in French (for definition of Qualification see page 15). Students who have passed Courses 102 or 112 but failed Qualification may be admitted on consent of the course coordinator, Mr. Morris. Course 201 is generally prerequisite to 202. M W F 9, 11, or 2 or T Th 5 10 or 11. Miss COLBY, Messrs. DEMOREST, MORRIS, Mrs. PARRISH, 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; poetry and drama in French 201, prose and fiction in French 202. The object is to acquire a reading facility while developing a critical appreciation of a foreign literature. As much English as is necessary will be used in sections at the beginning; as the year goes on, classes will be conducted more and more in French.

203. INTERMEDIATE CONVERSATION. Either term. Credit three hours. Prerequisite, Qualification in French (for definition of Qualification, see page 15). Students who have passed Courses 102 or 112 but failed Qualification may be admitted on consent of the course coordinator, Mr. Geary. Fall term: M W F 10 or 12 plus T Th 8, 9, 10, 11, 12. Spring term: M-F at 9 or 11.

Guided conversation, grammar drill, and oral and written composition. Emphasis is placed upon increasing the student's oral command of French.

204. INTERMEDIATE COMPOSITION. Either term. Credit three hours. Prerequisite, French 203. Fall term: M-F 12. Spring term: M-F 10 or 12.

Continuation of the work of French 203, with special attention to accurate and idiomatic expression in written French. Oral and written drill.

301-302. ELEMENTARY FRENCH FOR UPPERCLASSMEN. Throughout the year. Credit four hours a term. Prerequisite, satisfaction of language requirement for graduation and consent of the instructor. M W F 9. Mr. GEARY.

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. Either term. Credit four hours. Prerequisite, French 204. Fall term: M-F 2. Spring term: W F 2-4 plus one hour to be arranged.

Study of the stylistic resources of modern French, based on reading and analysis of selected texts. Detailed study of present-day syntax. Discussion, oral and written drill.

304. ADVANCED COMPOSITION AND CONVERSATION. Spring term. Credit four hours. Prerequisite, French 303. T Th 2-4 plus one hour to be arranged.

Continuation of the work in French 303.

315-316. LITERATURE OF THE MIDDLE AGES. Throughout the year. Credit four hours a term. Prerequisite, French 201-202 or consent of the instructor. May be entered in the second term by students with some previous training in Old French. M W F 9. Miss COLBY.

Lectures and classroom discussion in French. 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.

[318. **POETRY OF THE FIFTEENTH CENTURY.** Not offered in 1964-1965.]

[321. **INTRODUCTION TO SIXTEENTH-CENTURY POETRY.** Not offered in 1964-1965.]

[323. **RABELAIS.** Not offered in 1964-1965.]

[324. **POETRY OF THE BAROQUE AGE.** Not offered in 1964-1965.]

[334. **MOLIERE.** Not offered in 1964-1965.]

341. CURRENTS IN EIGHTEENTH-CENTURY THOUGHT. Fall term. Credit four hours. Prerequisite, French 201-202 or consent of the instructor. M W F 10. Mrs. PARRISH.

The development of thought in the eighteenth century, with special reference to the influence of English deism and to the scientific movements. Lectures in French, classroom discussion, written reports.

342. THE NOVEL IN THE EIGHTEENTH CENTURY. Spring term. Credit four hours. Prerequisite, French 201-202 or consent of the instructor. M W F 10. Mrs. PARRISH.

Readings in Marivaux, Prévost, Diderot, Rousseau, Laclos, Bernardin de Saint-Pierre. Lectures in French, classroom discussion, written reports.

[344. **THEATER OF THE EIGHTEENTH CENTURY.** Not offered in 1964-1965.]

351. **THE NOVEL OF THE ROMANTIC PERIOD.** Fall term. Credit four hours. Prerequisite, French 201-202 or consent of the instructor. M W F 11. Mr. DEMOREST.

Chateaubriand, Constant, Nodier, Stendhal, Blazac, George Sand, and Hugo. 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 11. Mr. DE MAN.

Interpretation of significant poems of Lamartine, Hugo, Vigny, Musset, and Nerval. Readings in some of the main critical documents of the period. Lectures in French, classroom discussion, written reports.

353. **THE NOVEL FROM 1857 TO THE PRESENT.** Spring term. Credit four hours. Prerequisite, French 201-202 or consent of the instructor. M W F 12. Mr. ADAMOV.

The dominant literary doctrines of the period—realism and naturalism—and their expression. Extensive reading of the novelists of the period: Flaubert, Huysmans, Zola, etc.

361. **MAJOR DRAMATISTS OF THE TWENTIETH CENTURY.** Spring term. Credit four hours. Prerequisite, French 201-202 or consent of the instructor. M W F 9. Mr. ADAMOV.

Esthetic and intellectual trends in contemporary French drama. Classroom discussions, oral and written reports.

[362. **MAJOR NOVELISTS OF THE TWENTIETH CENTURY.** Not offered in 1964-1965.]

[366. **PROUST: IN SEARCH OF TIME PAST.** Not offered in 1964-1965.]

381. **STUDIES IN FRENCH STYLE AND LITERARY ANALYSIS.** Fall term. Credit four hours. Primarily for majors. Prerequisite, consent of the instructor. T Th 2-3:30. Mr. —.

382. **STYLISTICS.** Spring term. Credit four hours. Primarily for majors or graduate students. Prerequisite, French 381 or consent of the instructor, T Th 2-3:30. Mr. SEZNEC.

A study of the stylistic significance of tenses and of sentence structure. Designed for those who are oriented toward a literature major or who are mainly concerned with language as literary expression.

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. M W F 2. Mr. LEONARD.

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 in alternate years. Credit four hours. Prerequisites, Qualification in French and Linguistics 201 or 301. M W F 2. Mr. BURSILL-HALL.

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 431-432.)

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.

[416. **LA LANGUE POETIQUE MEDIEVALE.** Not offered in 1964-1965.]

422. **MONTAIGNE.** Spring term. Credit four hours. Prerequisite, French 201-202 or consent of the instructor. Hours to be arranged. Mr. MORRIS.

Lectures in French, class discussions, oral and written reports.

[433. **NOVEL OF THE SEVENTEENTH CENTURY.** Not offered in 1964-1965.]

436. **LA FONTAINE.** Spring term. Credit four hours. Prerequisite, two terms of 300-level French literature courses or consent of the instructor. W 2-4. Mr. SEZNEC.

La Fontaine's poetry and short stories. Discussion in French, oral and written reports.

452. **STENDHAL.** Spring term. Credit four hours. Prerequisite, two terms of 300-level French literature courses or consent of the instructor. M 2-4. Mr. DEMOREST.

The diaries, essays, and novels of Stendhal. Discussions in French, oral and written reports.

459. **MALLARME.** Fall term. Credit four hours. Prerequisite, two terms of 300-level French literature courses or consent of the instructor. M 2-4. Mr. DE MAN.

The poetry, the prose, and the critical writings of Mallarme. Lectures in French, reports, and classroom discussion.

460. **MYTH IN THE THEATER.** Fall term. Credit four hours. Prerequisite, two terms of 300-level French literature courses or consent of the instructor. T 2:30-4:00. Mr. GROSSVOGEL.

The myth of Don Juan: the possibilities of social commentary, philosophical speculation, theatrical elaboration, and the like, as seen especially in the drama of Tirso, Molière, Montherlant, etc.

[464. **REPRESENTATIVE POETS OF THE TWENTIETH CENTURY.** Not offered in 1964-1965.]

487-498. **HONORS COURSE IN FRENCH.** Throughout the year. Credit four hours a term. May be entered in the second semester. Prerequisite, consent of the instructor. Hours to be arranged. Staff.

GRADUATE COURSES

[514. **CHRETIEN DE TROYES.** Not offered in 1964-1965.]

[521. **DU BELLAY.** Not offered in 1964-1965.]

523. **RONSDARD.** Fall term. Credit four hours. Hours to be arranged. Mr. MORRIS.

[532. **DESCARTES.** Not offered in 1964-1965.]

[547. **ESTHETICS AND LITERARY CRITICISM IN THE EIGHTEENTH CENTURY.** Not offered in 1964-1965.]

548. **MARIVAUX: LE DRAMATURGE ET LE ROMANCIER.** Spring term. Credit four hours. W 2-4. Mrs. PARRISH.

[552. **ALFRED DE VIGNY.** Spring term. Not offered in 1964-1965.]

561. **BERNANOS.** Fall term. Credit four hours. W 2-4. Mr. DEMOREST.

[563. **GIDE.** Not offered in 1964-1965.]

[565. **SARTE AND CAMUS AS NOVELISTS.** Not offered in 1964-1965.]

600. **SEMINAR IN FRENCH LINGUISTICS.** Offered in accordance with student needs. Credit three hours a term. Hours to be arranged. MESSRS. HALL or LEONARD.

German

MESSRS. V. T. BJARNAR, E. A. BLACKALL, A. BONAWITZ, D. CONNOR, J. M. COWAN, J. B. DALETT, P. DE MAN, M. JOLLES, H. L. KUFNER. MRS. HILDEGARD KUFNER, MESSRS. J. W. MARCHAND, H. H. MIETUSCH, B. E. PIKE, H. R. PLANT, and Staff.

For those not majoring in German, the prerequisite for admission to courses numbered 330 to 360 is German 202 or consent of the instructor. To obtain instructor's consent, students who have not completed German 202 will be required to show that they know sufficient German to follow with profit the course for which they wish to register.

For admission to a major in German, the prerequisites are both German 202 and 204. Students may apply for admission to the major while they are enrolled in these courses, but acceptance will be conditional on their completing these courses with a grade of 70 or above.

For the major in German, the following courses are to be completed: German 303, 304, 331, and at least five other 300- or 400-level courses in German. The natural progression to the major is through 201-202 and 203-204.

The Honors program in German consists of an integrated plan designed for the individual student and culminating in an Honors essay. For admission to the Honors program a student must have a minimum average of 85 in German courses, and the consent of Mr. Blackall.

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 Division of Literature, many of which complement the course offerings in German. German majors may, if they wish, use Division of Literature courses to fulfill their second distribution requirement.

101. **ELEMENTARY COURSE.** Either term. Credit six hours. Students who have previously studied German should consult page 00 before registering for this course. Fall term: drill, daily at 8, 9, 10, 11, or 12; lecture, M W 11 or T Th 11 or 12. Spring term: drill, daily at 8, 10, or 11; lecture, T Th 12.

102. ELEMENTARY COURSE. Either term. Credit six hours. Students who have previously studied German should consult page 16 before registering for this course. Fall term: drill, daily at 8 or 10; lecture, T Th 12. Spring term: drill, daily at 8, 9, 10, 11, or 12; lecture, M W 9 or T Th 9 or 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 or 12, lecture F 10. Spring term: drill T Th S 9, lecture F 10.

151. ELEMENTARY GRADUATE READING COURSE. Either term. Credit three hours. M W F 4:30 or 7.

Designed to help students prepare for the Graduate Reading Examination administered by the Graduate School.

152. ELEMENTARY GRADUATE READING COURSE. Either term. Credit three hours. Prerequisite, German 151 or one year of college German or two years of high school German. M W F 4:30 or 7.

Designed to help students prepare for the Graduate Reading Examination administered by the Graduate School.

201. MASTERPIECES OF GERMAN LITERATURE. Either term. Credit three hours. Prerequisite, Qualification in German (for definition of Qualification see page 15). Students who have passed Courses 102 or 112 but failed Qualification may be admitted on consent of the course coordinator, Mr. Pike. Fall term: M W F 9, 11, 12, or 2 or T Th S 9 or 10. Spring term: M W F 9 or T Th S 11. Messrs. PIKE, BONAWITZ, DALLETT, CONNOR, 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 11. Spring term: M W F 9, 11, 12, or 2 or T Th S 9 or 10. Messrs. PIKE, BONAWITZ, DALLETT, CONNOR, 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 15). Students who have passed Courses 102 or 112 but failed Qualification may be admitted on

consent of the course coordinator, Mr. Kufner. Fall term: M W F 9, 11, or 12 or T Th S 9, 10, or 11. Spring term: M W F 9 or T Th S 9 or 10.

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 9 or T Th S 10. Spring term: M W F 9 or 12 or T Th S 9 or 11.

Continuation of the work of German 203. Emphasis is placed on increasing the student's active vocabulary and command of grammatical patterns.

301-302. ELEMENTARY GERMAN FOR UPPERCLASSMEN. Throughout the year. Credit four hours a term. Prerequisite, satisfaction of language requirement for graduation and consent of the instructor. M W F 10. Mr. KUFNER.

Designed to impart a sound knowledge of the language for students who need it as a tool for research or who plan to go on to graduate school.

303. ADVANCED COMPOSITION AND CONVERSATION. Fall term. Credit four hours. Prerequisite, German 204 or consent of the instructor. M W F 10.

Emphasis is placed upon increasing the student's oral and written command of German. Detailed study of present-day syntax.

304. ADVANCED COMPOSITION AND CONVERSATION. Spring term. Credit four hours. Prerequisite, German 303 or consent of the instructor. M W F 10.

Further study of German syntax with emphasis on different levels of style. Selected texts will serve as the basis for practice in written and oral expression.

331. OUTLINES OF GERMAN LITERATURE UP TO 1700. Fall term. Credit four hours. Prerequisite, German 202 or consent of the instructor. T Th S 10. Mr. DALLETT.

The development of German literature from the earliest monuments illustrated by the reading of selected texts.

[**353. LESSING AND THE ENLIGHTENMENT.** Fall term. Credit four hours. Prerequisite, German 202 or consent of the instructor. M W F 9. Mr. JOLLES. Not offered in 1964-1965.]

354. SCHILLER AND GERMAN CLASSICISM. Spring term. Credit four hours. Pre-

requisite, German 202 or consent of the instructor. M W F 9. Mr. JOLLES.

Schiller's development as a dramatist, poet, and thinker. The emergence of German classicism and Schiller's part in its formation.

355. THE YOUNG GOETHE. Fall term. Credit four hours. Prerequisite, German 202 or consent of the instructor. M W F 12. Mr. BLACKALL.

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. ROMANTICISM. Fall term. Credit four hours. Prerequisite, German 202 or consent of the instructor. T Th S 9. Mr. ———.

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. ———.

German literature in the second half of the nineteenth century.

359. PROSE FICTION FROM THOMAS MANN TO HEINRICH BÖLL. Fall term. Credit four hours. Prerequisite, German 202 or consent of the instructor. M W F 10. Mr. PIKE.

A study of the development of the novel and short story in the twentieth century, with detailed study of the more important works.

360. POETRY AND DRAMA FROM RILKE TO BRECHT. Spring term. Credit four hours. Prerequisite, German 202 or consent of the instructor. M W F 10. Mr. PIKE.

A study of the development of lyrical poetry and the drama in the twentieth century, with detailed study of some of the more important works.

[401. HISTORY OF THE GERMAN LANGUAGE. Fall term in alternate years. Credit four hours. Prerequisites, German 204 or con-

sent of the instructor and Linguistics 201 or 301 taken previously or concurrently. M W F 11. Mr. KUFNER. Not offered in 1964-1965.]

[402. HISTORY OF THE GERMAN LANGUAGE. Spring term in alternate years. Credit four hours. Prerequisite, German 401 or consent of the instructor. M W F 11. Mr. KUFNER. Not offered in 1964-1965.]

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 11. 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 11. 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 12. Mr. BONAWITZ.

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 12. Mr. BONAWITZ.

The main authors and literary trends of the Middle High German period will be discussed in connection with the reading of extensive selections from the works of the great epic and lyric poets between 1190 and 1230.

451. HONORS READING COURSE. Fall term. Credit four hours. For Honors students only. The Staff.

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 two or three times a term.

452. HONORS READING COURSE. Spring term. Credit four hours. For Honors students only. The Staff.

A continuation of the work done in 451.

COURSES FOR GRADUATE STUDENTS

These courses are intended solely for graduate students; undergraduates will not be admitted. Corresponding courses at undergraduate level will be found listed under courses at the 300 and 400 level.

500. SPRECH- UND SCHREIBÜBUNGEN. Either term. No credit. Hours to be arranged. Mr. BONAWITZ and Staff.

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. MARCHAND.

502. GOTHIC. Spring term in alternate years. Credit four hours. W 2-4. Mr. MARCHAND.

[**503. OLD SAXON.** Fall term in alternate years. Credit four hours. W 2-4. Mr. MARCHAND. Not offered in 1964-1965.]

[**504. OLD HIGH GERMAN.** Spring term in alternate years. Credit four hours. W 2-4. Mr. MARCHAND. Not offered in 1964-1965.]

[**507-508. HISTORY OF THE GERMAN LANGUAGE SINCE 1500.** Throughout the year. Credit four hours a term. T 2-4. Mr. BLACKALL. Not offered in 1964-1965.]

509-510. OLD ICELANDIC. Throughout the year. Credit four hours a term. Hours to be arranged. Mr. BJARNAR.

[**COMPARATIVE GERMANIC LINGUISTICS.** (See Linguistics 541-542.)]

521. THE MIDDLE HIGH GERMAN EPIC. Fall term. Credit four hours. Prerequisite, German 406 or consent of the instructor. M 2-4. Mr. BONAWITZ.

[**522. THE MIDDLE HIGH GERMAN LYRIC.** Spring term. Credit four hours. Prerequisite, German 406 or consent of the instructor. M 2-4. Mr. BONAWITZ. Not offered in 1964-1965.]

[**523. GERMAN LITERATURE OF THE LATE MIDDLE AGES.** Fall term. Credit four hours. Not offered in 1964-1965.]

526. GERMAN LITERATURE OF THE SIXTEENTH CENTURY. Spring term. Credit four hours. F 2-4. Mr. DALLEY.

529-530. EIGHTEENTH-CENTURY LITERATURE OTHER THAN GOETHE. Throughout the year. Credit four hours a term. T 2-4. Fall term: Hölderlin. Mr. DE MAN. Spring term: Subject to be announced. Mr. JOLLES.

531-532. GOETHE. Fall or spring, one term only. Credit four hours. Th 2-4. Subject to be announced. Mr. BLACKALL.

533-534. TOPICS IN GERMAN ROMANTICISM. Fall or spring, one term only. Credit four hours. Th 2-4. Subject to be announced. Mr. BLACKALL.

535-536. GERMAN LITERATURE, 1832-1890. Throughout the year. Credit four hours a term. W 2-4. Mr. ———.

537-538. TOPICS IN TWENTIETH-CENTURY GERMAN LITERATURE. Throughout the year. Credit four hours a term. F 2-4. Fall term: Readings in the twentieth-century novel. Mr. PIKE.

An approach, primarily through discussion, of problems of genre and technique in Rilke, Mann, Musil, Grass, and Johnson. Reading knowledge of French is recommended. Spring term will not be given this year.

[**539. HISTORY AND METHODS OF MODERN GERMAN LITERARY CRITICISM.** Fall term. Credit four hours. T 2-4. Mr. JOLLES. Not offered in 1964-1965.]

[**541-542. THE PHILOSOPHIC BACKGROUND TO GERMAN LITERATURE: FROM LEIBNITZ TO HEIDEGGER.** Throughout the year. Credit four hours a term. T 2-4. Mr. JOLLES. Not offered in 1964-1965.]

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. The topics for 1964-1965 will be:

600. SEMINAR IN GERMANIC LINGUISTICS. Offered in accordance with student needs. Credit four hours. Topic and hours to be arranged.

653-654. SEMINAR IN GERMAN LITERATURE. Throughout the year. Credit four hours a term. Topic and hours to be arranged.

Hindi

MESSRS. G. H. FAIRBANKS, J. W. GAIR, G. B. KELLEY, B. G. MISRA, and Staff.

101-102. ELEMENTARY COURSE. Throughout the year. Credit six hours a term. Drill daily at 9; lecture, T Th 10.

201-202. HINDI READING. Throughout the year. Credit three hours a term. Prerequisite for 201, Qualification in Hindi; for 202, Hindi 201 or consent of the instructor. Hours to be arranged.

203-204. COMPOSITION AND CONVERSATION. Throughout the year. Credit three hours a term. Prerequisite for 203, Qualification in Hindi; for 204, Hindi 203 or consent of the instructor. Hours to be arranged.

301-302. READINGS IN HINDI LITERATURE. Throughout the year. Credit four hours a term. Prerequisite, Hindi 202. Hours to be arranged.

303-304. ADVANCED COMPOSITION AND CONVERSATION. Throughout the year. Credit four hours a term. Prerequisite, Hindi 204. Hours to be arranged.

305-306. ADVANCED HINDI READINGS. Throughout the year. Credit four hours a term. Prerequisite, Hindi 202. Hours to be arranged.

Intended for those who wish to do readings in history, government, economics, etc., instead of literature.

600. SEMINAR IN HINDI LINGUISTICS. Either term. Credit three hours. Prerequisite, consent of the instructor. Hours to be arranged. Mr. FAIRBANKS or Mr. KELLEY.

Indonesian

Messrs. J. M. ECHOLS, J. U. WOLFF, and Staff.

101-102. ELEMENTARY COURSE. Throughout the year. Credit six hours a term. Hours to be arranged.

201-202. INDONESIAN READING. Throughout the year. Credit three hours a term. Prerequisite for 201, Qualification in Indonesian; for 202, Indonesian 201 or consent of the instructor. Hours to be arranged. Mr. WOLFF.

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. Mr. WOLFF.

301. READINGS IN INDONESIAN AND MALAY. Either term. Credit four hours. Pre-

requisite, Indonesian 201-202 or the equivalent. Hours to be arranged. Mr. WOLFF.

302. READINGS IN INDONESIAN AND MALAY. Either term. Credit four hours. Prerequisite, Indonesian 301. Hours to be arranged. Mr. WOLFF.

[**303. ADVANCED INDONESIAN CONVERSATION AND COMPOSITION.** Either term. Credit four hours. Prerequisite, Indonesian 204. Hours to be arranged. Mr. ECHOLS and Staff. Not offered in 1964-1965.]

[**305. ADVANCED READINGS IN INDONESIAN AND MALAY LITERATURE.** Either term. Credit four hours. Prerequisite, Indonesian 302 or consent of the instructor. Mr. ECHOLS and Staff. Not offered in 1964-1965.]

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.)

[**SOUTHEAST ASIAN LITERATURE IN TRANSLATION.** (See Literature 318.) Not offered in 1964-1965.]

Italian

Messrs. G. P. BIASIN, R. M. DURLING, J. FRECCERO, R. A. HALL, JR., and Staff.

For a major in Italian, consult Mr. Durling and Mr. Hall.

101-102. ELEMENTARY COURSE. Throughout the year. Credit six hours a term. Drill, daily at 9 or 12; lecture, T Th 10.

203. COMPOSITION AND CONVERSATION. Fall term as required. Credit three hours. Prerequisite, Qualification in Italian. T Th 2-3:30.

Guided conversation, grammar drill, and oral and written composition. Emphasis is placed on increasing the student's oral and written command of Italian.

204. COMPOSITION AND CONVERSATION. Spring term as required. Credit three hours. Prerequisite, Italian 203. T Th 2-3:30.

Continuation of the work of Italian 203, with special attention to accurate and idiomatic expression in Italian. Oral and written drill.

221-222. ELEMENTARY COURSE. Throughout the year. Credit three hours a term. Prerequisite, satisfaction of the language require-

ment 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. Mr. FRECCERO. Intensive study of the Divine Comedy.

321-322. STUDIES IN THE ITALIAN RENAISSANCE. Throughout the year. Credit four hours a term. Prerequisite, Italian 313-314 or consent of the instructor. M W F 9. Mr. DURLING.

Fall term. Petrarch and Boccaccio. Spring term, the Renaissance to Ariosto.

361-362. THE MODERN PERIOD. Throughout the year. Credit four hours a term. Prerequisite, Italian 313-314 or consent of the instructor. M W F 10. Mr. BIASIN.

Fall term: the nineteenth century. Spring term: the twentieth century.

[421. *ITALIAN COMEDY.* Not offered in 1964-1965.]

422. RENAISSANCE DRAMA. Spring term. Credit four hours. Prerequisite, Italian 313-314 or consent of the instructor. Hours to be arranged. Mr. DURLING.

The major dramatic achievements of the Italian Renaissance, including works by Poliziano, Ariosto, Machiavelli, Aretino, Tasso, and Bruno.

[436. *TASSO AND THE LATER RENAISSANCE.* Not offered in 1964-1965.]

[442. *ARCADIA AND ENLIGHTENMENT.* Not offered in 1964-1965.]

451-452. ROMANTICISM IN ITALY. Throughout the year. Credit four hours a term. Prerequisite, consent of the instructor. Hours to be arranged. Mr. BIASIN.

The major currents in prose and poetry of the nineteenth century.

THE COMPARATIVE STUDY OF THE ROMANCE LANGUAGES. (See Linguistics 431-432.)

513-514. SPECIAL TOPICS IN THE DIVINE COMEDY. Throughout the year. Credit four hours a term. Prerequisite, consent of the instructor. Hours to be arranged. Mr. FRECCERO.

600. SEMINAR IN ITALIAN LINGUISTICS. Offered in accordance with student needs. Credit three hours. M W F 3. Mr. HALL.

Japanese

Mr. H. HENNE, and Staff.

101-102. ELEMENTARY COURSE. Throughout the year. Credit six hours a term. M-F 9, M W F 10.

201-202. JAPANESE READING. Throughout the year. Credit three hours a term. Prerequisite for 201, Qualification in Japanese; for 202, Japanese 201 or consent of the instructor. Hours to be arranged. Mr. HENNE.

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. Hours to be arranged. Mr. HENNE.

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. Mr. HENNE.

Emphasis is on Koogo style but Bungo 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. Mr. HENNE.

Emphasis is on Bungo and Kanbun styles of literature.

Javanese

MSSTS. 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. Hours to be arranged.

Linguistics

MSSTS. F. B. AGARD, N. C. BODMAN, J. M. COWAN, J. M. ECHOLS, G. H. FAIRBANKS, J. W. GAIR, R. L. HADLICH, R. A. HALL, JR., H. HENNE, C. F. HOCKETT, R. B. JONES, G. B.

KELLEY, H. L. KUFNER, R. L. LEED, C. S. LEONARD, JR., B. G. MISRA, J. W. MARCHAND, D. F. SOLA, J. U. WOLFF, and Staff.

Linguistics 201-202 satisfies Distribution 1 in the Social Sciences (see page 16).

COURSES FOR UNDERCLASSMEN

201-202. INTRODUCTION TO THE SCIENTIFIC STUDY OF LANGUAGE. Throughout the year. Credit three hours a term. M W F 9. Mr. COWAN and Staff.

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. SOLA.

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.

403-404. ANALYTIC TECHNIQUES. Throughout the year. Credit four hours a term. Prerequisite, Linguistics 201-202 or 301. M W F 10, and an afternoon laboratory hour to be arranged. Mr. HOCKETT and Staff.

A practical training course in the techniques of observation and analysis of descriptive linguistics.

431-432. THE COMPARATIVE STUDY OF THE ROMANCE LANGUAGES. Throughout the year. Credit four hours a term. Prerequisites, Linguistics 201-202 or Linguistics 301 taken previously or concurrently and consent of the instructor. T Th 2-3:30. Mr. HALL.

The family of Romance languages; the application of the comparative method and the reconstruction of Proto-Romance speech. The

relation between Proto-Romance and Old and Classical Latin. The history of the Romance languages as a whole from Latin times to the present and their interrelationships. A survey of the accomplishments and approaches of recent work in Romance linguistics. Lectures, discussion, and exercises.

ETHNOLINGUISTICS AND PSYCHOLINGUISTICS. (See Anthropology 461.)

GREEK DIALECTS. (See Greek 390.)

HISTORY OF THE LATIN LANGUAGE. (See Latin 347.)

COMPARATIVE GRAMMAR OF GREEK AND LATIN. (See Latin 350.)

ITALIC DIALECTS. (See Latin 390.)

COURSES PRIMARILY FOR GRADUATE STUDENTS

502. COMPARATIVE METHODOLOGY. Spring term in alternate years. Credit four hours. Prerequisite, Linguistics 201-202 or 301. Hours to be arranged. Mr. FAIRBANKS.

A study of the methods and techniques in comparative linguistics; application of these methods to various language families depending on the student's background.

508. LINGUISTIC TYPOLOGY. Spring term. Credit two or four hours. Prerequisite, Linguistics 404. Hours to be arranged. Mr. HOCKETT.

511-512. ACOUSTICAL PHONETICS. Throughout the year. Credit four hours a term. Prerequisite, consent of the instructor. Hours to be arranged. Mr. COWAN.

A rapid survey of the techniques of experimental articulatory phonetics; the speech mechanism as a sound generator; sound recording techniques, and the methods of general acoustics; application of acoustical analysis to the study of speech sounds. Requires no mathematical training beyond arithmetical computation; the necessary mathematical operations for acoustical analysis will be developed for the students by the instructor.

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.

[523-524. **ELEMENTARY SANSKRIT.** Throughout the year in alternate years. Credit three hours a term. Not offered in 1964-1965.]

525. **ELEMENTARY PALI.** Either term as needed. Credit three hours. Hours to be arranged. Mr. FAIRBANKS.

[541-542. **COMPARATIVE GERMANIC LINGUISTICS.** Throughout the year in alternate years. Credit four hours a term. Prerequisite, consent of the instructor. Hours to be arranged. Mr. MARCHAND. Not offered in 1964-1965.]

551-552. **COMPARATIVE SLAVIC LINGUISTICS.** Throughout the year in alternate years. Credit four hours a term. Prerequisite, consent of the instructor. Hours to be arranged. Mr. LEED.

571-572. **SEMINAR IN SOUTHEAST ASIAN LINGUISTICS.** Throughout the year. Credit four hours a term. Prerequisites, Linguistics 201-202 or 301 and consent of the instructor. Hours to be arranged. Mr. JONES.

Descriptive and comparative studies of mainland Southeast Asian languages are dealt with in alternate terms. Topics may be selected in accordance with the interests of the students.

573. **MALAYO-POLYNESIAN LINGUISTICS.** Either term. Credit four hours. Prerequisites, Linguistics 201-202 or 301 and consent of the instructor. Hours to be arranged. Mr. WOLFF.

575-576. **SINO-TIBETAN LINGUISTICS.** Throughout the year. Credit four hours a term. Prerequisite, Linguistics 201-202 or 301 or Chinese 402-403 and consent of the instructor. Hours to be arranged. Mr. BODMAN.

Descriptive and comparative studies of Chinese dialects and Tibeto-Burman languages.

600. **SEMINAR.** Each term. Admission by permission of the instructor. Hours and credits to be arranged. Various members of the Staff.

Subject to the needs of students and to the limitations of staff time, advanced seminars are set up in a wide variety of topics, which, in the past, have included such as the following: contemporary grammatical theory, applied linguistics in language teaching, applied linguistics in literacy training and orthography formation, English grammar, problems and methods of Romance linguistics, Romance linguistic geography, Old Provençal texts, Old Italian texts, problems of Romance genealogy, Romance-based Creoles, German dialects.

Portuguese

F. B. AGARD.

101-102. **ELEMENTARY COURSE.** Throughout the year. Credit six hours a term. Drill daily at 11. Lecture T Th 10.

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 9.

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.

Russian

MISS HETE ASCHER, MISS PATRICIA CARDEN, MESSRS. G. H. FAIRBANKS, G. GIBIAN, H. HENNE, M. HORWITZ, MRS. AUGUSTA L. JARYC, MESSRS. R. L. LEED, J. MENAKER, and Staff.

Russian majors study Russian language, literature, and linguistics, with emphasis placed in accordance with their specific interests.

It is desirable, although not necessary, for a prospective major to complete Russian 101-102, 201-202, and 203-204 as an underclassman, since these courses are prerequisite to most of the upperclass courses which count toward the major. A student may be admitted to the major upon satisfactory completion of Russian 102 or the equivalent.

Students who elect to major in Russian should consult with Mr. Gibian and Mr. Leed as soon as possible.

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.

For Distribution II for non majors the following sequences are recommended: Russian 201-202, 331-334; Russian 203-204, 303-304.

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.

101. ELEMENTARY COURSE. Either term. Credit six hours. Fall term: drill, daily at 8, 9, 10, 11, or 12; lecture, M W 2 or T Th 10 or 11. Spring term: drill, daily at 8 or 11; lecture, M W 10.

102. ELEMENTARY COURSE. Either term. Credit six hours. Prerequisite, Russian 101 or its equivalent. Fall term: drill, daily at 8 or 11; lecture, M W 10. Spring term: drill, daily at 8, 9, 10, or 12; lecture, M W 2 or T Th 10 or 11.

112. ELEMENTARY COURSE. Either term. Credit three hours. Prequalification course for students entering above the level of placement in Russian 102. Hours to be arranged.

151. ELEMENTARY GRADUATE READING COURSE. Either term. Credit three hours. Open only to graduate students. M W F 4:30.

Designed to help students prepare for the graduate reading examination administered by the Graduate School.

152. ELEMENTARY GRADUATE READING COURSE. Either term. Credit three hours. Open only to graduate students. Prerequisite, Russian 151 or consent of the instructor. M W F 4:30.

Designed to help students prepare for the graduate reading examination administered by the Graduate School.

201. RUSSIAN READING. Either term. Credit three hours. Prerequisite, Qualification in Russian (for definition of Qualification see page 15). 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 9.

202. RUSSIAN READING. Either term. Credit three hours. Prerequisite, Russian 201. Fall term: M W F 9. Spring term: M W F 10 or T Th S 10.

203. COMPOSITION AND CONVERSATION. Fall term. Credit three hours. Prerequisite, Qualification in Russian (for definition of Qualification see page 15). Students who have passed Courses 102 or 112 but failed Qualification may be admitted on consent of Mr. Leed. M W F 11, 12, or 2 plus an additional hour at M 3 or T 3.

204. COMPOSITION AND CONVERSATION. Spring term. Credit three hours. Prerequisite,

Russian 203. M W F 11, 12, or 2 plus an additional hour at M 3 or T 3.

MASTERPIECES OF RUSSIAN LITERATURE. In translation. Throughout the year. Credit three hours a term. M W F 12. Miss GARDEN. (See Literature 221-222.)

292. SUPERVISED READING IN RUSSIAN LITERATURE. Either term. Variable credit. By invitation of the Department.

301-302. ELEMENTARY RUSSIAN FOR UPPERCLASSMEN. Throughout the year. Credit four hours a term. Prerequisite, satisfaction of language requirement for graduation and consent of the instructor. M W F 9. Mr. LEED.

Designed to impart a sound knowledge of the language for students who need it as a tool for research or who plan to go on to graduate school.

303. ADVANCED COMPOSITION AND CONVERSATION. Fall term. Credit four hours. Prerequisite, Russian 204. M W F 11. Mrs. JARYC.

304. ADVANCED COMPOSITION AND CONVERSATION. Spring term. Credit four hours. Prerequisite, Russian 303. M W F 11. Mrs. JARYC.

305-306. ADVANCED READINGS. Throughout the year. Credit four hours a term. Prerequisite, Russian 202. Hours to be arranged. Mrs. JARYC.

Designed for students needing further practice in reading Russian that is not literary.

THE RUSSIAN NOVEL. In translation. Fall term. Credit four hours. T Th S 9. Mr. GIBIAN. (See Literature 311.)

SOVIET LITERATURE. In translation. Spring term. Credit four hours. M W F 10. Mr. HORWITZ. (See Literature 312.)

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 1964-1965.]

334. THE RUSSIAN SHORT STORY. Spring term. Credit four hours. T Th 3 and one hour to be arranged. Prerequisite, Russian 202 and consent of the instructor. Miss GARDEN.

Pushkin, Turgenyev, Chekhov, Leskov, Bunin, and others.

401-402. HISTORY OF THE RUSSIAN LAN-

GUAGE. 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. Prerequisites, Qualification in Russian and Linguistics 201. M W F 2. Mr. LEED. Not offered in 1964-1965.]

[404. **RUSSIAN FOR TEACHERS.** Spring term in alternate years. Credit four hours. Prerequisites, Qualification in Russian, Linguistics 201, and Russian 403. M W F 2. Mr. LEED. Not offered in 1964-1965.]

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 AND THE NATURAL SCHOOL.** Fall term. Credit four hours. Prerequisites, Russian 332 or 334 or the equivalent, and consent of the instructor. M W F 10. Mr. HORWITZ.

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. Not offered in 1964-1965.]

[502. **OLD RUSSIAN.** Spring term in alternate years. Credit four hours. Hours to be arranged. Not offered in 1964-1965.]

521-522. **RUSSIAN LITERATURE FROM THE BEGINNINGS TO 1800.** Throughout the year. Credit four hours a term. M W F

2. Students who have not taken 521 may enter 522 only with the permission of the instructor. Reading knowledge of Russian required. Mr.

531. **PROSE WRITERS 1890 TO 1914.** Fall term. Credit four hours. M W F 3. Mr. HORWITZ.

Bunin, Kuprin, Andreyev, Gorky, Bely, Sologub.

534. **STUDIES IN THE PROSE OF ANDREY BELY.** Spring term. Credit four hours. M W F 3. Mr. HORWITZ.

GRADUATE SEMINARS

COMPARATIVE SLAVIC LINGUISTICS. (See Linguistics 551-552.)

600. **SEMINAR IN SLAVIC LINGUISTICS.** Offered in accordance with student needs. Credit four hours. Hours to be arranged. Mr. HENNE or Mr. LEED.

671. **SEMINAR IN TWENTIETH-CENTURY RUSSIAN LITERATURE.** Fall term. Credit four hours. Th 4-6. Topic varies from year to year. Topic for 1964-1965: Prose in the 1920's. Miss CARDEN.

672. **SEMINAR IN NINETEENTH-CENTURY RUSSIAN LITERATURE.** Spring term. Credit four hours. Th 4-6. Topic varies from year to year. Topic for 1964-1965: Tolstoy. Mr. GIBIAN.

Serbo-Croatian

Mr. R. L. LEED.

221-222. **ELEMENTARY COURSE.** Throughout the year. Credit three hours a term. Prerequisite, Qualification in Russian and consent of the instructor. Hours to be arranged. Mr. LEED.

Sinhalese

Messrs. G. H. FAIRBANKS, J. W. GAIR, and Staff.

101-102. **ELEMENTARY COURSE.** Throughout the year. Credit six hours a term. Hours to be arranged.

Spanish

Messrs. F. B. AGARD, C. BANDERA, D. BRENES, Mts. CRISTINA FIGUEROA, Messrs. R. L. HADLICH, M. D. SALTARELLI, 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. Sold; (3) major courses: Spanish 303-304, 311-312, 403; (4) six additional courses to be taken from the following: Spanish 353-354, 401-402, 412, 421, 422, 423, 425-426, 427, 428, 461-462, 464, 467-468.

The Distribution I requirement in the Humanities is satisfied in Spanish by any two of the following courses: Spanish 201, 311, 312; but no course may be counted if it is used in fulfillment of the language requirement.

101. ELEMENTARY COURSE. Either term. Credit six hours. Fall term: drill daily at 8, 9, or 12; lecture M W 2 or T Th 3. Spring term: drill daily at 8 or 9; lecture W F 12.

102. ELEMENTARY COURSE. Either term. Credit six hours. Prerequisite, Spanish 101 or its equivalent. Students who have previously studied Spanish should consult page 16 before registering for this course. Fall term: drill, daily at 9; lecture W F 12. Spring term: drill, daily at 9, 10, or 12; lecture M W 2 or 3.

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, 11, or 12; lecture, Th 9. Spring term: drill, M W F 9, 10, or 12; lecture, Th 3.

201. INTRODUCTION TO HISPANIC LITERATURE. Either term. Credit three hours. Prerequisite, Qualification in Spanish (for definition of Qualification see page 15). Students who have passed Courses 102 or 112 but failed Qualification may be admitted on consent of Mr. Brenes. M W F 8 or T Th S 9. Mr.

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 15). Students who have passed Courses 102 or 112 but failed Qualification may be admitted on consent of Mr. Hadlich. Fall term: M-F 9, 11, or 2. Spring term: M-F 11, 12, or 2.

Guided conversation, grammar review, and oral and written composition. Emphasis is on increasing the student's oral and written command of Spanish.

204. INTERMEDIATE COMPOSITION AND CONVERSATION. Either term. Credit three hours. Prerequisite, Spanish 203. Fall term: M-F 9 or 3. Spring term: M-F 9, 10, or 3.

The study of advanced grammar. Exercises designed to improve the student's ability to speak, read, and write Spanish.

221-222. ELEMENTARY COURSE. Throughout the year. Credit three hours a term. Prerequisites, satisfaction of the language requirement in a Romance language or Latin and consent of the instructor. M W F 2.

303. ADVANCED COMPOSITION AND CONVERSATION. Fall term. Credit four hours. Prerequisite, Spanish 204. M-F 11.

The study of fundamental aspects of style in standard spoken Spanish; advanced problems in comparative usage in English and Spanish. Frequent oral and written reports in Spanish are required. Cultural content is oriented to Spain.

304. ADVANCED COMPOSITION AND CONVERSATION. Spring term. Credit four hours. Prerequisite, Spanish 303. M-F 11.

Extensive reading in current Spanish language publications. The study of fundamental aspects of style in standard written Spanish. Cultural content is oriented to Spanish America.

311-312. MASTERPIECES OF HISPANIC LITERATURE. Throughout the year. Credit four hours a term. Prerequisite, Spanish 201, four years entrance Spanish, or consent of the instructor. May be entered in second term. M W F 11. Mr. BANDERA.

Reading and discussion of representative works of Spanish and Spanish American literature. Works chosen are read in their entirety. Most of the first-semester material is from Golden Age and colonial authors. Second semester deals with the nineteenth and twentieth centuries. Class conducted in Spanish.

353-354. **THE SPANISH NOVEL.** Throughout the year. Credit four hours a term. Prerequisite, Spanish 311 or 312 or consent of the instructor. May be entered in the second term. M W F 9. Mr. BANDERA.

Reading and discussion of significant novels of Spain. Fall term: romanticism, costumbrismo, naturalism. Spring term: from the generation of '98 to the present. Class conducted in Spanish.

401-402. **HISTORY OF THE SPANISH LANGUAGE.** Throughout the year in alternate years. Credit four hours a term. Prerequisites, Qualification in Spanish and Linguistics 201. M W F 3. Mr. HADLICH.

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 or Mr. HADLICH.

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 or Mr. HADLICH.

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 431-432).

412. **MEDIEVAL NON-EPIC WORKS.** Spring term. Credit four hours. Prerequisite, a Spanish 300-level literature course or consent of the instructor. M W F 3. Mr. BANDERA.

A study of selected poetry and prose of the Middle Ages. Juan Ruiz, Lopez de Ayala, Baena, the chronicles, and didactic writers.

413. **THE EPIC.** Fall term. Credit four hours. Prerequisite, a Spanish 300-level literature course or consent of the instructor. M W F 3. Mr. BANDERA.

Intensive study of the medieval epic. The *Cid*, Fernan Gonzalez and Berceo.

[421. **THE GOLDEN AGE.** Not offered in 1964-1965.]

422. **GOLDEN AGE NON DRAMATIC LITERATURE.** Fall term. Credit four hours. Prerequisite, a Spanish 300-level literature course or consent of the instructor. M W F 12. Mr. ———.

A study of works by Quevedo, Gracian, Saavedra, Fray Luis de Leon, and Gongora.

[423. **THE PICARESQUE NOVEL.** Not offered in 1964-1965.]

425-426. **CERVANTES.** 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. Hours to be arranged. First meeting in Room 288, Goldwin Smith Hall, on the first day of instruction at 4 p.m. Mr. BRENES.

Fall term: *Don Quijote*, Part I, and the *Novelas*. Spring term: *Don Quijote*, Part II, *Persiles*, and dramatic works. Class conducted in Spanish.

427. **TWENTIETH-CENTURY LATIN AMERICAN NOVEL.** Fall term. Credit four hours. Prerequisite, a Spanish 300-level literature course or consent of the instructor. Hours to be arranged. First class meeting in 283 Goldwin Smith at 4:30 p.m. on the first day of instruction. Mr. BRENES.

An intensive study of selected novels representing the main tendencies with special attention given to the *indianista* movement and the novel of the revolution.

428. **THE LATIN-AMERICAN SHORT STORY.** Spring term. Credit four hours. Prerequisite, a Spanish 300-level literature course or consent of the instructor. Hours to be arranged. First class meeting in 283 Goldwin Smith at 4 p.m. on the first day of instruction. Mr. BRENES.

A study of selected short story writers from Palma to the contemporaries and their relationship to European and North American authors.

[461-462. **REALISM: DRAMA AND THE NOVEL.** Not offered in 1964-1965.]

[463. **THE HISPANIC DRAMA.** Not offered in 1964-1965.]

[464. **HISPANIC POETRY.** Not offered in 1964-1965.]

465-466. UNDERGRADUATE SEMINAR IN SPANISH LITERATURE. Throughout the year. May be entered in the second term. Credit four hours a term. Prerequisite, Spanish 311 or 312 and consent of the instructor. Open to qualified non-majors. Hours to be arranged. Mr. BRENES.

Topic to be announced.

467-468. HONORS WORK IN HISPANIC LITERATURE. Throughout the year. May be entered in the second term. Credit four hours a term. Prerequisite, consent of the instructor. Hours to be arranged. Staff.

517-518. GRADUATE SEMINAR IN HISPANIC LITERATURE. Throughout the year. May be entered in the second term. Credit four hours a term. Hours to be arranged. Staff.

Topic to be announced.

600. SEMINAR IN IBERO-ROMANCE LINGUISTICS. Offered in accordance with student needs. Credit four hours. Hours to be arranged. Mr. AGARD or Mr. SOLA.

Telugu

Mr. G. B. KELLEY and Staff.

101-102. ELEMENTARY COURSE. Throughout the year. Credit six hours a term. Hours to be arranged.

Thai

Mr. R. B. JONES, Jr., and Staff.

101-102. ELEMENTARY COURSE. Throughout the year. Credit six hours a term. M-F 10, M W F 11.

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. Drill, daily at 9. Lecture, T Th 10.

Vietnamese

Mr. R. B. JONES, Jr., and Staff.

101-102. ELEMENTARY COURSE. Throughout the year. Credit six hours a term. Hours to be arranged.

201-202. VIETNAMESE READING. Throughout the year. Credit three hours a term. Prerequisite for 201, Qualification in Vietnamese; for 202, Vietnamese 201 or consent of the instructor. Hours to be arranged. Mr. JONES.

203-204. COMPOSITION AND CONVERSATION. Throughout the year. Credit three hours a term. Prerequisite for 203, Qualification in Vietnamese; for 204, Vietnamese 203 or consent of the instructor. Hours to be arranged. Mr. JONES.

301-302. ADVANCED VIETNAMESE. Throughout the year. Credit four hours a term. Prerequisite, Vietnamese 201-202 or consent of the instructor. Hours to be arranged. Mr. JONES.

Selected readings in Vietnamese writings in various fields.

MUSIC

Mr. W. A. CAMPBELL, *Chairman*; Messrs. W. W. AUSTIN, B. H. GILMORE, D. J. GROUT, W. C. HOLMES, J. T. H. HSU, K. HUSA, J. KIRKPATRICK, R. J. KREMER, S. KURLAND, R. M. PALMER, 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.

Prerequisites for admission to the major are: Music 151-152, with a grade above 75 in each part of the final examination (including sight singing and keyboard playing); Music 282; Music 321-322; and participation in one of the musical organizations or ensembles (Music 331 through 338 and 441 through 444).

Required courses for the A.B. with major in music are: Music 351-352; 381-382; 451; 481; a second year of individual instruction in performance and of participation in a musical organization or ensemble; a course in conducting and score-reading (Music 461-462 or 463-464); and one of the following: 452, 482, or 490.

Candidates for Honors in music will be designated by the Department at the beginning of the second term of their junior year. Honors candidates will take Music 401-402 in addition to the courses regularly required for a major. Each candidate will submit an Honors thesis or a composition not later than April 25 of his senior year and will be required to pass a general examination in the theory and history of music not later than May 25 of his senior year.

The Distribution I requirement in the Expressive Arts is satisfied in music by Music 213-214, 215-216, or 151-152.

The following courses may be offered toward the satisfaction of Distribution II requirements: Music 213-214, 215-216 (if not used for Distribution I), and 313-314.

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. HOLMES.

Designed for music majors and other qualified students. An integrated theory course, prerequisite for all advanced courses in music. Study of the fundamental elements of music: rhythm, intervals, scales, triads; harmony, elementary counterpoint, and introduction to composition in instrumental style. Drill in aural discrimination, sight singing, keyboard harmony, sight reading; melodic, harmonic, and contrapuntal dictation; and score reading.

215-216. BASIC TECHNIQUES OF MUSIC. Throughout the year. Music 215 repeated in spring term. Credit three hours a term. Ability to sing on pitch is required for admission; some ability to play an instrument is desirable. First term prerequisite to second. M-F 9. Mr. KURLAND. Music 215, spring term: Mr. GILMORE. This course may not be counted toward the requirements for the major in music.

Study of the fundamental techniques of music. Includes rhythmic, melodic, and harmonic dictation; sight singing; writing of melody and simple four-part harmony; keyboard harmony; and listening to recorded masterpieces. Second term includes introduction to analysis and simple contrapuntal writing for voices and instruments.

351-352. THEORY II. Throughout the year. Credit four hours a term. Prerequisite, Music 152 or equivalent. First term prerequisite to second. M W F 10 and T Th 3. Messrs. KREMER and PALMER.

Includes advanced harmony and intermediate counterpoint and analysis. A continuation of Music 151-152, with more advanced drill in the areas specified in the description of that course. Special emphasis on the study of chromatic harmony and contrapuntal writing in two and three voices. There will be analysis of melody and harmony and of some of the fundamental homophonic and contrapuntal forms.

[451. **ADVANCED COUNTERPOINT AND ANALYSIS: EIGHTEENTH CENTURY.** Fall term. Credit four hours. Prerequisite, Music 352 or equivalent. Mr. PALMER. Not offered in 1964-1965.]

453. ADVANCED COUNTERPOINT AND ANALYSIS: SIXTEENTH CENTURY. Fall term. Credit four hours. Prerequisite, Music 352 or equivalent. M W 12 and Th 2. Mr. PALMER.

Contrapuntal techniques of the sixteenth century, including the analysis of works by Palestrina and his contemporaries.

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.

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.

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 1964-1965.]

463-464. CHORAL CONDUCTING AND SCORE READING. Throughout the year. Credit two hours a term. Prerequisite, Music 352. First term prerequisite to second. Th 2-4, with one half-hour of practical exercise to be arranged. Mr. SOKOL.

A study of the techniques of beat and of rehearsal and score reading. Each member of the class will frequently conduct a laboratory chorus and occasionally conduct one of the choral organizations.

Music History

213-214. THE ART OF MUSIC. Throughout

the year. Credit three hours a term. Open to sophomores and upperclassmen. First term, or consent of instructor, prerequisite to second. T Th 11. Discussion sections, Th 2, 3, F 8, 10, 11, 12, 2, 3, S 8, 9, 10, 11. Concerts at 8:15 P.M. on Oct. 13, Nov. 17, Jan. 12, and Feb. 9. Mr. AUSTIN and assistants.

Studies to foster the growth of rational enjoyment of the art of music. First term: the elements and instruments of music and musical forms, as exemplified in music of various epochs and nations, and various degrees of complexity. Second term: the work of representative composers in relation to their social and artistic environment, with emphasis on Mozart's *Don Giovanni* and Stravinsky's *Rake's Progress*.

282. INTRODUCTION TO MUSICAL STYLE AND ANALYSIS. Spring term. Credit three hours. Prerequisite, Music 152 or equivalent. M W F 11. Mr. AUSTIN.

A study of the interplay of idiom and structure in various styles through analysis of typical masterpieces.

313. MASTERPIECES OF MUSIC. Fall term. Credit four hours. Prerequisite, consent of instructor. M W F 12. Mr. GROUT.

Study of selected works and their historical environment. In 1964 the subject will be "Verdi and Wagner: Opera and Music Drama."

314. THE GREAT TRADITION IN MUSIC. Spring term. Credit four hours. Prerequisite, consent of instructor. M W F 12. Mr. GROUT.

Intensive study of a single work or group of works as representative of a given tradition and style. In 1965 the subject will be "Beethoven's String Quartets."

381-382. HISTORY OF MUSIC I. Throughout the year. Credit four hours a term. Prerequisite, Music 282. First term prerequisite to second. M 2-4, W 2-3. Mr. HOLMES.

History of musical styles from the Middle Ages to the present. Readings from theoretical sources (in translation) and written reports.

481. HISTORY OF MUSIC II. Fall term. Credit four hours. Prerequisite, Music 382. M 2-4, and individual conferences to be arranged. Mr. GROUT.

Intensive study of selected topics, with analyses, collateral reading, and written reports.

482. PROSEMINAR IN MUSICOLOGY. Spring term. 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.

Musical Performance

321-322. INDIVIDUAL INSTRUCTION IN VOICE, ORGAN, PIANO; STRING, WOODWIND, AND BRASS INSTRUMENTS. Throughout the year. For credit, see below. Consent of instructor required.

Basic fee for one half-hour lesson weekly during one term (carrying no credit), \$60. Fees for a practice schedule of six hours weekly during one term: \$40 for the use of a pipe organ in Barnes Hall or Bailey Hall; \$10 for a practice room with piano; \$5 for a practice room without piano.

For credit: one hour lesson weekly (or two half-hours) and a double practice schedule carry three hours of credit for two terms, provided that the student has earned or is earning at least an equal amount of credit in courses in music history or music theory. (Students should register in Music 321-322 for one hour's credit the first term and two hours' credit the second term.) The basic fees involved are then multiplied by one and a half (lesson fee \$90; practice fee \$60, \$15, and \$7.50). A student may register for this course in successive years.

490. SUPPLEMENTARY STUDIES IN PERFORMANCE AND PEDAGOGY. Spring term. Credit hours to be arranged. Consent of instructor required. Mr. CAMPBELL and Staff.

Musical Organizations And Ensembles

Throughout the year. Credit one hour a term. Consent of instructor required; admission by audition only. Registration is permitted in two of these courses simultaneously, and students may register in successive years, but no student may earn more than six hours of credit in these courses. Membership in these and other musical organizations is also open to students without credit, if desired.

331-332. SAGE CHAPEL CHOIR. Th 7:15-9 p.m., Sun. 9:30 a.m. Mr. SOKOL.

335-336. CORNELL ORCHESTRAS. Rehearsals for the Cornell Symphony Orchestra: W 7:30-10 p.m., full orchestra; alternate T 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.

Th 7-9 p.m., F 4:30-6 p.m. or M 4:30-6 p.m., W 7-9 p.m. and additional hours to be arranged. MESSRS. CAMPBELL and GILMORE.

441-442. CHAMBER MUSIC ENSEMBLE. Hours to be arranged. Mr. KURLAND and Mr. HSU.

443-444. PRECLASSICAL CHAMBER MUSIC ENSEMBLE. (SINGERS AND INSTRUMENTALISTS.) M 3-4:30. Mr. SOKOL and Mr. HSU.

Study and performance of selected music from the Middle Ages to 1750.

Courses Primarily For Graduates

551-552. SEMINAR IN COMPOSITION. Throughout the year. Credit four hours a term. Open to seniors by permission. W 2-4. Mr. PALMER.

Intended to make the student acquainted with compositional practices in contemporary styles and to develop his creative abilities.

553. ADVANCED STRUCTURAL ANALYSIS AND AN INTRODUCTION TO INTERRELATIONAL ANALYSIS. Fall term. Credit four hours. Prerequisite, Music 451 or its equivalent. T 9-11, Th 9. Mr. PALMER.

Designed to develop an analytic technique applicable to the music of any period. The techniques are studied first and then applied to the problems of the analysis of music from its beginnings through the nineteenth century. Given in three parts, in successive fall terms, in the following divisions: Part I, from the beginnings to 1600; Part II, from 1600 to 1790; Part III, from 1790 to 1890. Two terms of this course are ordinarily required of graduate students in composition and three terms are recommended. Part I will be offered in 1964-1965.

580. SEMINAR IN CONTEMPORARY MUSIC. Spring term. Credit four hours. Prerequisite, Music 451 or equivalent. Required of all graduate students in composition during each year of residence except the last. T 9-11. Mr. PALMER.

Detailed analysis of a limited number of works representative of the main trends in twentieth-century music. Material covered will vary from year to year.

581-582. INTRODUCTION TO BIBLIOGRAPHY AND RESEARCH. Throughout the year. Credit four hours a term. Prerequisites, a reading knowledge of French and German and an elementary knowledge of music theory

and general music history. Open to seniors by permission. M 9-11. Mr. SAMUEL.

The basic materials and techniques of musicological research.

681-682. SEMINAR IN MUSICOLOGY. 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 Latin, French, and German. W 10-12. Mr. GROUT and Mr. HOLMES.

Introduction to the principal sources and notations of medieval and Renaissance music, with exercises in transcription.

PHILOSOPHY

Mr. ———, *Chairman*; MESSRS. M. BLACK, S. M. BROWN, JR., J. V. CANFIELD, K. S. DONNELLAN, D. B. LYONS, N. MALCOLM, N. C. PIKE, D. SACHS, S. S. SHOEMAKER, R. R. K. SORABJI, F. L. WILL.

Students expecting to major in philosophy must begin their systematic study of it in their underclass years and, at the very latest, the sophomore year. For admission to the major, the normal requirement is Philosophy 201 and 210 and one additional underclass course to be passed with a grade of 75 or above. Application for admission is made to the Chairman of the Department.

For the major itself, the requirement is 32 hours of upperclass philosophy courses, taken normally at the rate of two four-hour courses per term. Each major must complete the following: (1) at least one additional course in the history of philosophy chosen from among Philosophy 301, 303, and 305; and (2) at least two courses numbered above 400.

Students who wish to graduate with Honors in philosophy should discuss this with the chairman of the Department at the time they apply for admission to the major. For provisional acceptance as a candidate for Honors, a student must have chosen a philosophy major, have a cumulative average of 80 for all work in the College and have an average of 85 for courses in philosophy. All candidates for Honors normally enroll in the Honors Seminar (Philosophy 601-602) in both their junior and senior years. In addition, in their senior year, they pursue a program of research in both the fall and spring terms and, during the spring term, write an Honors essay.

The Distribution I requirement in the Humanities is satisfied in philosophy by completing any one of the following groups: Philosophy 101 plus any course numbered 200; 201-301; 203-221.

101. INTRODUCTION TO PHILOSOPHY.

Either term. Credit three hours. Open to freshmen and sophomores only. Fall term: M W F 10, 12, T Th S 9, 11, 12. Spring term: M W F 11, 12, T Th S 9, 10, 12. Registration is limited to 30 students a section. MESSRS. CANFIELD, DONNELLAN, LYONS, PIKE, SACHS, SHOEMAKER, and SORABJI.

An introduction to philosophical ideas and problems through a study of Descartes' *Meditations*, Berkeley's *Principles*, and Russell's *Problems of Philosophy*. Collateral reading from classical and contemporary sources will be assigned.

110. INTRODUCTION TO LOGIC. Either term. Credit three hours. Open to freshmen and sophomores only. Fall term: M W F 9, T Th S 9. Spring term: M W F 10, T Th S 12. Registration is limited to 40 students a section. MESSRS. CANFIELD, LYONS, and WILL.

An introduction to the principles and techniques of traditional and symbolic logic. Includes discussion of types of arguments, problems in logic, and logical concepts relevant

to philosophy. Recommended to all underclassmen, including prospective philosophy majors, with an interest in logic. Upperclassmen with an interest in logic should obtain advice from the instructor of Philosophy 412.

201. ANCIENT AND MEDIEVAL PHILOSOPHY.

Fall term. Credit four hours. Open to sophomores and upperclassmen throughout the University and to others by permission of the instructor. Required for majors in philosophy. T Th S 9. Discussion sections to be arranged. Mr. SORABJI.

Occidental philosophical thought from its Greek origins to the end of the medieval period. A study of the most important figures, works, and systems in their cultural context.

Philosophy 201 and 301 comprise a sequence in the history of philosophy. This sequence satisfies both the Distribution I requirement in the humanities and the history of philosophy requirement for the philosophy major.

203. SOCIAL AND POLITICAL PHILOSOPHY.

Either term. Credit four hours. Open to

sophomores and upperclassmen and to freshmen who have taken 101. Fall term: T Th S 10. Spring term: T Th S 9. Mr. PIKE.

An introductory examination of some of the more important concepts involved in social and political theory, for example, contract as the source of authority in the state, the purpose of government, justice, law, etc. Readings from such writers as Hobbes, Locke, Hume, Nietzsche, Hitler and Marx.

Philosophy 203 and 221 comprise an 8-hour sequence in social and moral philosophy which satisfies the Distribution I requirement in the humanities.

[205. **ELEMENTARY SEMANTICS.** Not offered in 1964-1965.]

210. PHILOSOPHICAL PROBLEMS. Either term. Credit four hours. Recommended for sophomores and juniors who are majors or prospective majors in philosophy; others may be admitted, but must obtain the permission of the instructor. Registration is limited to 35 students a section.

The study of a selected philosophical problem. Contemporary as well as classical sources.

Fall term: T Th S 11, and a fourth hour to be arranged. Mr. SHOEMAKER.

Topic for 1964-1965: Space and Time.

Spring term: M W F 10, and a fourth hour to be arranged. Mr. DONNELLAN.

Topic for 1964-1965: Freedom and Responsibility.

221. ETHICS. Spring term. Credit four hours. Open to sophomores and upperclassmen and to freshmen who have taken 101. M W F 11. Mr. BROWN.

The basic moral ideas of Western civilization as interpreted by its major philosophers and moralists—Greek ethical theory, Old and New Testament morality, Hobbes and the British Utilitarians, Butler and Kant.

250. HUME, DARWIN AND MARX. Fall term. Credit four hours. Open to sophomores and upperclassmen. M W F 10, plus a fourth hour to be arranged. Mr. WILL.

A study of certain central ideas in their writings.

301. MODERN PHILOSOPHY. Spring term. Credit four hours. Open to upperclassmen throughout the University and to sophomores who have taken Philosophy 201. M W F 9. Discussion sections to be arranged. Mr. SHOEMAKER.

Development of occidental philosophy from the sixteenth to the end of the nineteenth century. A study of the most important figures, works, and systems in their cultural context.

[303. **MEDIEVAL PHILOSOPHY: ADVANCED COURSE.** Not offered in 1964-1965.]

305. SPECIAL TOPICS IN THE HISTORY OF PHILOSOPHY. Spring term. Credit four hours. Prerequisite, six hours of philosophy or consent of the instructor. T Th S 12, and a fourth hour to be arranged. Mr. PIKE.

Topic for 1964-1965: to be announced.

308. CONTEMPORARY PHILOSOPHY. Fall term. Credit four hours. Prerequisite, six hours of philosophy or consent of the instructor. M W F 11, and a fourth hour to be arranged. Mr. CANFIELD.

A study of major figures or movements in twentieth-century philosophy.

Topic for 1964-1965: Logical Positivism.

310. PHILOSOPHY IN LITERATURE. Spring term. Credit four hours. Open without prerequisite to upperclassmen in the College and to others by consent of the instructor. M W F 11, and a fourth hour to be arranged. Mr. SACHS.

An examination of philosophical topics concerning the condition and conduct of human life, as they appear in a selection of literary works, from Sophocles' *Oedipus Rex* to Kafka's *Metamorphosis*.

[313. **AMERICAN PHILOSOPHY.** Not offered in 1964-1965.]

322. PHILOSOPHY OF RELIGION. Fall term. Credit four hours. Open to upperclassmen without prerequisite. T Th S 12, and a fourth hour to be arranged. Mr. PIKE.

A philosophical examination of some major theological issues: religious experience, religious language, arguments for the existence of God, miracles, faith.

[323. **AESTHETICS.** Not offered in 1964-1965.]

325. ETHICAL THEORY. Fall term. Credit four hours. Prerequisite, any 200 level course or consent of the instructor. T Th S 11, and a fourth hour to be arranged. Mr. LYONS.

A systematic study of one or two types of ethical theory.

Topic for 1964-1965: Formalism and Intuitionism.

327. INTRODUCTION TO PHILOSOPHY OF SCIENCE. Fall term. Credit four hours. Open to juniors, seniors, and graduate students. Lectures, M W 2. Discussion, F 2. Discussion section for graduate students to be arranged. Mr. BLACK.

Critical analysis of scientific methods with special reference to the natural science; detailed study of such topics as causality, theory making, concept formation and measurement.

333. PHILOSOPHY OF PSYCHOLOGY. Spring term. Credit four hours. Open to upperclassmen with two courses in philosophy or psychology, and others by consent of the instructor. M W 2, F 2-4. Mr. MALCOLM.

In the beginning of the course some study will be given to the "mind-body problem," i.e. the nature of the relationship between mental states or consciousness on the one hand, and bodily states and behavior on the other. The topic of "unconscious" mental states will then be taken up, with special attention given to the place of this idea in Freudian psychology.

402. PROBLEMS IN ETHICS AND PHILOSOPHY OF MIND. Spring term. Credit four hours. Open to juniors, seniors, and graduate students. Prerequisite, 9 hours of philosophy or consent of the instructor. M W F 2, and a fourth hour to be arranged. Mr. SACHS.

Selected topics in moral and mental philosophy: moral feelings and attitudes, ethical subjectivism and ethical relativism, thought and action, intentions, oneself and one's future.

Topics for 1964-1965: to be announced.

412. DEDUCTIVE LOGIC. Fall term. Credit four hours a term. Prerequisite, consent of the instructor. Intended for philosophy majors, graduate students, and others having suitable background. M W F 12, and a problems section to be arranged. Mr. DONNELLAN.

Introduction to current methods of formal logic and their philosophical implications—propositional calculus, calculus of functions, theory of descriptions, properties of formal systems.

[**413. DEDUCTIVE LOGIC.** Not offered in 1964-1965.]

421. PROBLEMS IN PHILOSOPHY OF SCIENCE. Spring term. Credit four hours. Prerequisite, Philosophy 327. Open to seniors and graduate students; others by consent of the instructor. T Th S 10, and a fourth hour to be arranged. Mr. CANFIELD.

Intensive study of one or two selected problems.

Topic for 1964-1965: Explanation.

423. METAPHYSICS. Fall term. Credit four hours. Open to graduate students and seniors majoring in philosophy, to others only by consent of the instructor. M W F 11, and a fourth hour to be arranged. Mr. ———.

Topic for 1964-1965: to be announced.

425. CONTEMPORARY ETHICAL THEORY. Spring term. Credit four hours. Open to graduate students and seniors majoring in philosophy, to others only by consent of the instructor. T Th S 11, and a fourth hour to be arranged. Mr. LYONS.

Topics for 1964-1965: Rule-Utilitarianism.

427. THEORY OF KNOWLEDGE. Spring term. Credit four hours. Open to graduate students and to seniors majoring in philosophy; others by consent of the instructor. M W F 12, and a fourth hour to be arranged. Mr. WILL.

Topic for 1964-1965: to be announced.

[**429. PHILOSOPHY OF LOGIC.** Not offered in 1964-1965.]

430. PLATO AND ARISTOTLE. Spring term. Credit four hours. Open to philosophy majors, graduate students, and others by consent of the instructor. M W F 10, and a fourth hour to be arranged. Mr. SORABJI.

Topic for 1964-1965: Aristotle's Doctrine of Causes and Its Antecedents.

490-491. SPECIAL STUDIES IN PHILOSOPHY. Throughout the year. Credit three hours per term. Open only to Honors students in their senior year. Members of the Department.

Seminars

576. PLATO. Fall term. Credit three hours. M 3-5. Mr. SACHS.

585. ETHICS AND VALUE THEORY. Spring term. Credit three hours. W 3-5. Mr. ———.
Topic for 1964-1965: to be announced.

587. AESTHETICS. Fall term. Credit three hours. W 3-5. Mr. ———.
Topic for 1964-1965: to be announced.

588-589. METAPHYSICS. Both terms. Credit three hours.

Fall term: Th 3-5 Mr. ———.

Topic for 1964-1965: to be announced.

Spring term: M 3-5. Mr. DONNELLAN.

Topic for 1964-1965: Human Action.

594. **THEORY OF KNOWLEDGE.** Spring term. Credit three hours. T 2-4. Mr. MALCOLM.

Topic for 1964-1965: to be announced.

595. **SEMANTICS AND LOGIC.** Fall term. Credit three hours. Open only to graduate students. T 2-4. Mr. BLACK.

Topic for 1964-1965: to be announced.

602. **HONORS SEMINAR.** Spring term. Credit four hours. F 3-5. Mr. CANFIELD.

Topic for 1964-1965: Belief.

PHYSICS

Mr. L. G. PARRATT, *Chairman*; MESSRS. V. AMBEGAOKAR, K. J. BARNES, L. L. BARNES, A. J. BEARDEN, K. BERKELMAN, P. BEST, H. A. BETHE, R. BOWERS, P. A. CARRUTHIERS, G. V. CHESTER, D. R. CORSON, R. M. COTTS, T. R. CUYKENDALL, J. P. DELVAILLE, J. W. DEWIRE, D. A. EDWARDS, D. B. FITCHEN, C. W. GARTLEIN, L. H. GERMER, K. I. GREISEN, F. L. GROSS, D. R. HARRINGTON, P. L. HARTMAN, D. F. HOLCOMB, T. KINOSHITA, J. A. KRUMHANS, D. M. LEE, R. M. LITTAUER, H. MAHR, B. D. MCDANIEL, N. D. MERMIN, P. MORRISON, M. S. NELKIN, H. F. NEWHALL, J. OREAR, T. J. PETERSON, R. O. POHL, R. RAJARAMAN, T. N. RHODIN, H. S. SACK, E. E. SALPETER, D. B. SCARL, H. W. SCHNOPPER, B. M. SIEGEL, A. J. SEIVERS, J. SILCOX, R. H. SILSBEE, A. SILVERMAN, R. L. SPROULL, P. C. STEIN, R. TALMAN, A. TAYLOR, D. H. TOMBOULIAN, W. WEBB, K. G. WILSON, R. R. WILSON, W. M. WOODWARD and D. R. YENNIE.

Entering freshmen exceptionally well prepared in physics may receive advanced placement and credit for one or two terms of Physics 101-102, 121-122, or 207-208 by demonstrating a high level of proficiency in (a) the advanced placement examination of the College Entrance Examination Board or (b) the advanced placement examination given at Cornell just before the start of classes in the fall. Application for the Cornell examination should be made to the Department of Physics no later than the first registration day. Note that an entering freshman may proceed directly into sophomore physics only if he has also advanced placement in calculus.

A student interested in a physics major program should take Physics 207-208, and either Mathematics 111 and 122 or 191-192, in his freshman year.

A student will ordinarily be admitted to a major program in physics, either Option A or B, if he has passed at a good level of proficiency one year of college physics and of calculus.

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, e.g., for students who may seek less physics specialization at the Bachelor-degree level, and 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, and if he accepts a prolongation (depending upon the amount by which he exceeds the Option B requirements) of his period of graduate study.

OPTION A: (a) Thirty credit hours of physics courses selected from those courses indicated by the symbol # in the list below, including at least two of the three courses Physics 310, 360, and 410, and Physics 443 (or 572), and at least one of Physics 444 or 454, with twenty of these thirty hours at a grade of 70 or higher; and (b) Mathematics 421 (or 216); or their equivalent. Graduate courses in physics (numbered above 499) will not be accepted as substitutes in meeting requirement (a) except that Physics 572 may be substituted for Physics 443 on recommendation of the major adviser. Students in engineering may transfer into this option with Physics 225-226 or 227-278 reckoned as six of the thirty credit hours of requirement (a); such students may satisfy the minimal laboratory requirement, i.e., in the three courses Physics 310, 360, and 410, with four credit hours of Physics 410.

Deviations from any fixed course-program are common and often encouraged for different students. However, as a guide for Option A major students, Physics 305 and either 310 or 360 should be taken in the sophomore year. It is possible but very difficult to complete Option A starting in the sophomore year.

OPTION B: (a) Fifteen credit hours of physics courses numbered between 300 and 500, ap-

proved by the major adviser, including Physics 310 and 436, or their equivalent; (b) three credit hours in mathematics beyond Mathematics 213, 221, or 293; and (c) eighteen credit hours in approved courses in the natural sciences with at least eight of these eighteen hours in courses numbered above 300. Requirement (c) may be satisfied in part by approved additional physics courses numbered between 300 and 500; and up to eight of the eighteen hours may be in history of science or philosophy of science. It is usually possible to complete this option starting in the sophomore year. Students in engineering may transfer into this option with Physics 223-224, 225-226, or 227-228 (the second year of physics for engineering students) reckoned as three of the 15 credit hours of requirement (a); and Physics 227-228 is reckoned as meeting the Physics 310 requirement in this option.

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 if he has (a) an average grade of 85 or higher in all physics courses offered in fulfillment of the major requirements; (b) satisfactorily passed Physics 481-482 or 491-492; and (c) in addition to satisfying the major requirements, three hours (or more) credit in one of the following: (1) special project work, (2) graduate physics courses (numbered above 499) with a grade of 80 or better, (3) interdepartmental work with the prior approval of the Physics Majors Committee and with the recommendation of the instructor(s) upon completion of the work. Any student interested in the Honors program should consult with his major adviser before registering for the work of his senior year.

DISTRIBUTION REQUIREMENTS:

The Distribution I requirement in physical sciences is satisfied in physics by Physics 101-102, 201-202, 207-208, or with Cornell Summer Session courses Physics 105 and Physics 109 (3 credit hours).

Distribution II requirements, with a non-physics major, may be met with Physics 207-208 and any additional 6 or more credit hours of physics courses numbered above 300. Physics 201-202 is recommended as a 6-hour terminal sequence in partial fulfillment of these requirements (the requirements would then be satisfied with 8 hours of related courses in another field).

With a physics major, the Distribution II requirements may be satisfied in any of many ways. Commonly, Mathematics 422-423 (Option A) or 215-216 (Option B) are included in this Distribution, and, sometimes, about half of the required fourteen hours are selected from approved advanced courses offered in the College of Engineering. Note, however, that no more than twelve hours taken outside the College of Arts and Sciences may be counted toward the minimum of sixty hours of upperclass standing.

SPECIAL COURSES AND SEQUENCES:

Physics 121-122 and 223-228 are designed as a four-term introduction to analytical physics for students in the College of Engineering. The second year's work consists of one of the two-term sequences 223-224, 225-226, or 227-228. Assignment to a given sequence in the second year will be made on the basis of the student's previous performance; students of engineering should see the Director of the Division of Basic Studies of the College of Engineering for section assignments.

Physics 337-338, following either 226 or 228, contains parts of Physics 305, 307, 319, and 325, and prepares students for course Physics 443.

Physics 431 is primarily for graduate students in a field other than physics (e.g., in chemistry, biology, engineering, mathematics) who have had about two years of college physics and who wish a short-cut to more advanced physics courses. Such students may proceed, from Physics 431, directly to Physics 443, 510, 571, 572, or 573, depending upon collateral preparation and interests. For such students who have had less than two years of college physics, Physics 303, 322 (and possibly 307 and/or 436) should precede 431.

The four courses, Physics 571, 572, 573, and 574, are designed as a logical two-year series to cover basic graduate theoretical physics. Physics 578 is a recommended fifth course to extend the series.

101-102. GENERAL PHYSICS. Throughout the year. Credit four hours a term. Prerequisite, three years of college preparatory mathematics or consent of the instructor. Course 101 is prerequisite to 102. Designed as

a two-term unit; taking only the first term is not recommended. Most students majoring in a natural science or who have had or are co-registered in calculus should elect Physics 207-208 instead of this course. Demonstration

lectures, M F 9 or 11. Two hours of recitation per week and one two-hour laboratory alternate weeks, as assigned. For prospective teachers of secondary-school science an additional recitation period will be held T 8. Preliminary examinations will be held at 8 p.m. Oct. 26, Nov. 30, Jan. 11, Mar. 15, Apr. 12, May 17. Messrs. RAJARAMAN, KRISCH, MORRISON, and Staff.

The vast progress in man's understanding of the physical world, including discussion of present-day problems. Basic principles and their relation to all of physical science. Topics include: mechanics, heat, electricity, light, relativity, quantum theory, structure of matter, nuclear physics, and elementary particles. At the level of *Fundamental Physics* by Orear.

121-122. INTRODUCTORY ANALYTICAL PHYSICS. Throughout the year. Credit three hours a term. Prerequisite, calculus or co-registration in Mathematics 191-192. Course 121 is prerequisite to 122. Primarily for students of engineering. Lecture, T 9, 11, or 2. Two discussion periods per week and one 2½ hour laboratory period every other week, as assigned. Preliminary examinations will be held at 7:30 p.m. on Oct. 27, Dec. 1, Jan. 12, Mar. 16, Apr. 13, May 18. Messrs. NEWHALL, MAHR, TALMAN, GROSS, 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. Either term. Credit four hours. Prerequisites, Physics 101-102, six credit hours of college work in chemistry, and six in biological science. Students having a grade below 70 in either Physics 101 or 102 may not register for the course without permission of the instructor. Lectures, T Th 12. Laboratory, T or F 2-4. One discussion period per week to be arranged. Mr. L. BARNES and Staff.

Lectures, laboratory experiments, and small discussion groups, dealing with selected topics related to the study of biology. Topics selected from the properties of matter, electricity, electromagnetic radiation, and nuclear physics.

201-202. ASPECTS OF THE PHYSICAL WORLD. Throughout the year. Credit three hours a term (only one hour credit a term is allowed if taken after Physics 101-102). Prerequisites, three years of college preparatory mathematics and high school physics or

chemistry, or consent of the instructor. Course 201 is prerequisite to 202. Primarily a terminal course for non-science majors. Pre-medical students should elect Physics 101-102 or 207-208 instead of this course. Lectures, M W F 2. One 2-hour laboratory-discussion period per week, as assigned. Not all of this total of 5 hours will be used each week; class time will average about 4 hours per week. Messrs. HOLCOMB, R. WILSON, SCHNOPPER, and Staff.

A set of widely ranging but related topics will be considered, without attempt to cover the whole subject of physical science systematically at any level. A diversity of treatment will be employed, ranging from the exploration of some literary consequences to detailed problem-solving and laboratory experiment. The central aim is to give non-science majors in the College of Arts and Sciences some insight into the methods and the results of physics and its neighboring sciences, but the course is also open to others. 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 problems of communications.

207-208. FUNDAMENTALS OF PHYSICS. Throughout the year. Credit four hours a term. Prerequisite, calculus or co-registration in Mathematics 111-112 or 191-192, or consent of instructor. Course 207 is prerequisite to 208. Intended as a first course for most students majoring in a natural science or in mathematics. Demonstration lectures, W F 9 or 11. Two discussion periods a week, and one 2½ hour laboratory period alternate weeks, as assigned. Preliminary examinations will be held at 7:30 p.m. on Nov. 3, Dec. 15, Mar. 9, and Apr. 20. Messrs. CORTS, POIL, 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.

223-224. INTRODUCTORY ANALYTICAL PHYSICS. Throughout the year. Credit three hours a term. Prerequisites, Physics 122 and co-registration in Mathematics 293-294, or equivalent. Course 223 is prerequisite to 224. Lectures, Th 9 or 11. Two discussion periods a week, and one 2½ hour laboratory period every other week, as assigned. Messrs. TOMBOULIAN, PETERSON, and Staff.

A survey of electric and magnetic fields including a review and an extension of the study of static fields and their sources. Fields in simple dielectrics, charges in motion, time-varying fields, induced electromotive force, fields in magnetic materials, energy of charge and

current distributions, electrical oscillations, electromagnetic field relations. Wave motion with emphasis on the properties of electromagnetic waves; reflection, refraction, dispersion, and polarization. Superposition of waves; interference and diffraction. Selected topics from contemporary physics such as relativity, quantum effects, atomic and x-ray spectra, nuclear structure and reactions, solid state physics. The laboratory work includes experiments in electrical measurements, physical electronics, optics, and nuclear physics. At the level of *Electric and Magnetic Fields* by Tombouliau and of *Elementary Modern Physics* by Weidner and Sells.

225-226. INTRODUCTORY ANALYTICAL PHYSICS. Throughout the year. Credit three hours a term. Prerequisites, same as for Physics 223-224. Course 225 is prerequisite to 226. Lecture, T 9 or 11. Two discussion periods a week, and one 2½ hour laboratory period every other week, as assigned. Messrs. DELVAILLE, TOMBOULIAN, K. BARNES, 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 and of *Elementary Modern Physics* by Weidner and Sells.

227-228. INTRODUCTORY ANALYTICAL PHYSICS. Throughout the year. Credit three hours a term. Prerequisites, same as for Physics 223-224. Course 227 is prerequisite to 228. Lecture, S 11. Two discussion periods a week, and one 2½ hour laboratory period every other week, as assigned. Messrs. FITCHEN, TOMBOULIAN, and Staff.

The main topics are the same (none omitted) as in Physics 223-224, but the treatment is at a level sufficiently advanced to stimulate students of superior competence and interest. At the level of *Electricity and Optics* by Frank, *Optics* by Rossi, and of *Elementary Modern Physics* by Weidner and Sells.

303. INTERMEDIATE MECHANICS. Fall term. Credit three hours. Prerequisites, Physics 102 or 208 and Mathematics 112 or 192 (co-registration in Mathematics 213 desirable), or consent of the instructor. T Th S 9. Mr. GREISEN.

Newtonian mechanics, conservation laws, central forces, oscillation systems and wave propagation, relativity. At the level of *Mechanics and Properties of Matter*, Second Edition, by Stephenson.

#305. THE REVOLUTION IN PHYSICS, 1900-1927. Fall term. Credit four hours. Prerequisites, Physics 208 and co-registration in

Mathematics 213 or preferably in 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. Mr. GREISEN.

Developments leading to modern physical concepts such as quantum theory of radiation, quantum mechanics, special relativity, and atomic structure. At the level of *Principles of Modern Physics* by French.

307. OPTICS AND WAVE MOTION. Fall term. Credit four hours. Prerequisites, at least co-registration in Physics 303 or 305, and also in Mathematics 213, 221 or 293; or consent of the instructor. Lectures, T Th S 11 and S 12. Mr. LEE.

Properties of waves (electromagnetic, mechanical, acoustic, etc.), velocity of light, polarization, interference phenomena, Huygens' and Fermat's principles, Fraunhofer and Fresnel diffraction with application to image formation, double refraction, optical activity, photons and phonons, and other topics as time permits. At the level of *Optics* by Rossi and of *Fundamentals of Physical Optics*, Second Edition, by Jenkins and White.

#310. INTERMEDIATE EXPERIMENTAL PHYSICS. Either term. Credit four hours. Prerequisites, Physics 102 or 208 or 224, and Mathematics 112 or 192, or consent of the instructor. Laboratory, M W 1:40-4:30. Lecture, F 1:40-3. Enrollment limited to 40 in the fall term. In the spring term an additional laboratory section will be opened Th 1:40-4:30 and S 9-12 if registration exceeds 40 students. Mr. SCARL and Staff.

Lectures on topics in experimental techniques. Selected laboratory experiments to suit the student's need, e.g., mechanics, errors and probability, electricity, magnetism, optics, spectroscopy, and modern physics.

311-312. TEACHING PRE-COLLEGE PHYSICS. Throughout the year. Credit one hour a term. Prerequisites, at least one year of college physics and an interest in teaching science at the junior or senior high school level. Course 311 is not a prerequisite to 312. T 1:40-4:30. Mr. MORRISON.

Discussion and laboratory work. Emphasis is on the nature and design of recent pre-college physical science programs, especially in physics, e.g., the PSSC laboratory experiments and instructional materials. The scientific concepts are stressed. New developments by the students will be encouraged.

#319. ANALYTIC MECHANICS. Fall term. Credit four hours. Prerequisites, Physics 208 or 226 (and preferably 305 and 310), Mathe-

matics 222 or 294 (or co-registration in 215), or consent of the instructor. T Th S 9 and Th or F 3. Mr. K. WILSON.

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* by Sygne and Griffith or of *Mechanics* by Symon.

322. PRINCIPLES OF ELECTRICITY. Spring term. Credit four hours. Prerequisites, Physics 224 or 303 (and preferably 310), Mathematics 213 or 221 or 293, or consent of the instructor. M W F 11 and Th 12 or F 3. Mr. DEWIRE.

Topics selected from Physics 325-326, treated with less mathematical sophistication. At the level of *Electricity and Magnetism* by Duckworth, or of *Principles of Electricity*, 3d ed., by Page and Adams.

#325-326. ELECTRICITY, MAGNETISM, AND PHYSICAL OPTICS. Throughout the year. Credit four hours each term. Prerequisites, Physics 208 or 226 (and preferably 305 and 310), and Mathematics 222 or 294 (or co-registration in 215), or consent of the instructor. Course 325 is prerequisite to 326. Lectures, T Th S 11 and W or Th 3. Preliminary examinations will be held at 7:30 p.m. on Oct. 30, Dec. 11, Mar. 12, and Apr. 23. Fall term. Mr. STEIN. Spring term, Mr. HARRINGTON.

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.

337. INTERMEDIATE ANALYTICAL PHYSICS. Fall term. Credit four hours. Prerequisites, Physics 226, Mathematics 294, or consent of the instructor. Primarily for students of engineering. Lecture, M W F 10, T 2; discussion section, Th or F 2. Mr. SIEGEL.

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 phe-

nomena, Fraunhofer and Fresnel diffraction, polarization, dispersion.

338. INTERMEDIATE ANALYTICAL PHYSICS. Spring term. Credit five hours. Prerequisite, Physics 337 or consent of the instructor. Primarily for students of engineering. Lecture, M T W Th F 11; discussion section, T or W 2. Mr. SILCOX.

Analytical mechanics of material particles, systems of particles, rigid bodies, and fluids; oscillating systems; planetary motion and stability of orbits; collisions, gyroscopic motion; Lagrange's equations; Hamilton's equations. Analogue between mechanical systems and electric systems with network applications. Loaded transmission line and vibrating string. Phenomenological introduction to atomic and nuclear physics, with emphasis on the interpretation of observations in terms of the breakdown of classical mechanics. Selected topics from atomic and nuclear physics, including scattering experiments, spectroscopy, and properties of particles.

#342. KINETIC THEORY AND THERMODYNAMICS. Spring term. Credit four hours. Prerequisites, Physics 322 or 319 (and preferably 305); Mathematics 214, 222 or 294; or consent of the instructor. T Th S 9 and either M or T 3. Mr. CARRUTHERS.

Concept 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 ideal gases. Van der Waals gas, paramagnetic solids, and the electromagnetic radiation field. Simple probability with a brief discussion of binomial, multinomial, normal and Poisson distributions, and the random walk problem. Elementary kinetic theory of gases, Maxwellian distribution of velocities, transport phenomena, and the Knudsen gas. Introduction to statistical mechanics including a treatment of Maxwell-Boltzmann, Bose-Einstein, and Fermi-Dirac statistics with applications to simple systems such as the ideal gas, paramagnetic solid, black body radiation, and electrons in metals. At the level of *Thermal physics*, rev. ed., by Morse.

#360. ELECTRONIC INSTRUMENTATION. Either term. Credit four hours. Prerequisite, Physics 208 or 224, or consent of the instructor. Lectures and laboratory, M W F 1:40-4:30. Mr. BEST.

Introduction to the principles of vacuum tubes, semiconductor devices, electronic components and circuits, and to the operating characteristics of power supplies, amplifiers,

oscillators, servo systems, switching and timing circuits, etc. At the level of *Electronics for Scientists* by Malmstadt, Enke, and Toren.

#410. ADVANCED EXPERIMENTAL PHYSICS. Either term. Credit four hours. Prerequisite, Physics 310 or 360, and 303 or 319 or 338, and 322 or 325 or 337, or consent of the instructor. Limited to seniors except by special permission. Laboratory, T W or Th F 1:40-4:30. Lecture, M 1:40-3:00. Messrs. HARTMAN, BERKELMAN, BOWERS, CUYKENDALL, DEWIRE, LEE, RHODIN, SIEGEL, SIEVERS, SILCOX, SILSBEE, SILVERMAN, SPROULL, TALMAN, TAYLOR, WEBB, and WOODWARD.

Lectures and problems on selected topics in experimental concepts and techniques. About seventy different experiments are available in the laboratory among the subjects of mechanics, acoustics, optics, spectroscopy, electrical circuits, electronics and ionics, heat, X-rays, crystal structure, solid state physics, cosmic rays, and nuclear physics. During a term the student is expected to perform four to eight experiments, selected to meet his individual needs. Emphasis is placed on independent work.

431. INTRODUCTORY THEORETICAL PHYSICS. Fall term. Credit four hours. Primarily for graduate students in a science other than physics. Prerequisites, Physics 303 and 322 (and preferably 307), and co-registration in Mathematics 215 (preferably 415), or consent of the instructor. M W F S 9. Mr. NELKIN.

Classical mechanics and electromagnetic theory. At the level of *Theoretical Physics* by H. Wangness.

436. MODERN PHYSICS. Spring term. Credit four hours. Prerequisites, Physics 322 and Mathematics 214 or 222 or 294, or consent of the instructor. T Th S 12 and T 3. Mr. WOODWARD.

Selected topics in atomic, solid state, and nuclear physics; fundamental particles, atomic spectra, fundamentals of the quantum theory, the periodic table, X-rays, cosmic rays, properties of nuclei, and nuclear interactions. At the level of *Principles of Modern Physics* by French.

#443. ATOMIC PHYSICS AND INTRODUCTION TO QUANTUM MECHANICS. Fall term. Credit four hours. Prerequisites, Physics 319 and 325, or 338, or 431; and Mathematics 216 or co-registration in 421; or consent of the instructor. Some students may advisably take Physics 572 instead of this course. Course 443 is more intuitive in its approach; 572 is more

formal and analytically thorough. T Th S 10 and M or T 2. Mr. McDANIEL.

Difficulties with the classical interpretations of atomic properties and atomic structure are resolved in terms of quantum mechanics. At the level of *Introduction to Quantum Mechanics* by Dicke and Wittke and of *Principles of Modern Physics* by Leighton.

#444. NUCLEAR AND HIGH-ENERGY PARTICLE PHYSICS. Spring term. Credit four hours. Prerequisite, Physics 443 or consent of the instructor. T Th S 10 and T 2. Mr. YENNIE.

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. ELECTRONIC PROPERTIES OF SOLIDS AND LIQUIDS. Spring term. Credit four hours. Prerequisite, Physics 443 or consent of the instructor. M W F 9, and M 12 or 3. Mr. BOWERS.

A semiquantitative introduction to modern solid state physics, including lattice structure, lattice vibrations, thermal properties, electron theory of metals and semiconductors, magnetic properties, and superconductivity. At the level of *Introduction to Solid State Physics* by Kittel.

481-482. SENIOR SEMINAR. Throughout the year. Credit one hour each term. Prerequisite, consent of the student's major adviser (or of the instructor if the student is not majoring in physics). Course 481 is not prerequisite to 482. Intended primarily for Option B majors in their senior year. Th 3. Mr. PARRATT.

Practice in the organization, oral presentation, and discussion of topics selected to illustrate the unifying methods and *modi operandi* which underly many diverse fields of physics. An attempt is made to interlock physics with other fields of knowledge.

490. INDEPENDENT STUDY IN PHYSICS. Either term. Credit one to four hours a term. Prerequisites, Physics 305 and 310, or equivalent, and consent of the instructor. 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. HONORS SEMINAR. Throughout the year. Credit one hour each term. Prereq-

uise, consent of the student's major adviser (or of the instructor if the student is not majoring in physics). Course 491 is not prerequisite to 492. Intended primarily for Option A majors in their senior year. Th 3. Fall term, Mr. —. Spring term, Mr. McDANIEL.

Practice in the organization, oral presentation, and discussion of selected topics in physics.

500. INFORMAL GRADUATE LABORATORY. Either term. Credit one to three hours a term. Associated with the Physics 410-510 laboratory. Primarily for graduate students who do not have the prerequisites for Physics 510. T W or Th F 1:40-4:30. Mr. HARTMAN and Staff.

505-506. DESIGN OF ELECTRONIC CIRCUITRY. Throughout the year. Credit two hours each term. Prerequisites, Physics 310, Mathematics 214, familiarity with complex representation of a-c signals, and some introductory acquaintance with electronic instrumentation (e.g., Physics 360), or consent of the instructor. Course 505 is prerequisite to 506. T Th 9. Mr. —.

Circuit techniques and design in electronic measurement and instrumentation with emphasis on pulse waveforms. Transistors and vacuum tubes are treated side by side; special devices are described briefly. At the level of *Pulse and Digital Circuits* by Millman and Taub.

510. ADVANCED EXPERIMENTAL PHYSICS. Either term. Credit three hours per term. Prerequisites, Physics 410 and 443, or the equivalent. At least one term of Physics 510 is ordinarily required for the first-year graduate student of physics. Laboratory, T W or Th F 1:40-4:30. MESSIS. HARTMAN, BERKELMAN, BOWERS, CUYKENDALL, DEWIRE, LEE, RHODIN, SIEGEL, SIEVERS, SILCOX, SILSBEE, SILVERMAN, SPROULL, TALMAN, TAYLOR, WEBB, and WOODWARD.

About seventy different experiments are available among the subjects of mechanics, acoustics, optics, spectroscopy, electrical circuits, electronics and ionics, heat, X-rays, crystal structure, solid state, cosmic rays, and nuclear physics. During the term the student is expected to perform four to eight experiments, selected to meet his individual needs. Stress is laid on independent work on the part of the student.

514. X-RAYS: THE INTERMEDIATE ENERGY RANGE IN PHYSICS. Spring term. Credit three hours. Prerequisite, Physics 443 or consent of the instructor. Offered only if registration exceeds nine students. M W F 10. Mr. PARRATT.

X-rays provide study of physical phenomena in the intermediate energy range in atomic and solid state physics. Interactions between matter and energy in this range emphasize both particle and wave characteristics. Selected topics in production, absorption, scattering, diffraction, energy levels in atoms and solids, and in special tool-applications as class interest justifies and as time permits.

571. CLASSICAL MECHANICS. Fall term. Credit three hours. Prerequisites, Physics 319 or 338 or 431, and co-registration in Mathematics 415 or 423, or consent of the instructor. T Th S 11. Mr. SALPETER.

Lagrange's equations and applications to particle motion and particle accelerators; small vibrations and linear vector spaces; continuum mechanics with application to wave motion and scattering; Hamilton's equations; introduction to variational methods for classical fields. At the level of *Classical Mechanics* by Goldstein.

572. QUANTUM MECHANICS. Either term. Credit four hours. Prerequisites, same as for Physics 443 plus at least co-registration in Mathematics 415 or 423, or consent of the instructor. Suitable for many students after Physics 443; course 443 is more physical-intuitive in approach, course 572 is more formal and analytical. M W F 11 and S 12. Fall term, Mr. YENNIE. Spring term, Mr. KINOSHITA.

The wave function and its interpretation. The Schrödinger equation; oscillator, hydrogen atom; transformation theory (classical and quantum). Approximate methods of solution. Operators and matrices. Electron spin, the exclusion principle; scattering theory. At the level of *Quantum Mechanics* by Schiff or *Quantum Mechanics* by Merzbacher.

573. ELECTRODYNAMICS. Spring term. Credit four hours. Prerequisites, Physics 326 or 337, and 571 or 431, and Mathematics 415 or 423, or consent of the instructor. M W F S 9. Mr. KRUMHANS.

Introductory potential theory; Maxwell's equations and their meaning; quasi-static problems; energy and momentum of the field; waves in space and in guides; radiation and scattering; special relativity. At the level of *Electrodynamics of Continuous Media* by Landau and Lifshitz, or *Classical Electrodynamics* by Jackson.

574. INTERMEDIATE QUANTUM MECHANICS. Spring term. Credit three hours. Prerequisites, Physics 572 and Mathematics 416 or 423, or consent of the instructor. M W F 9. 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, relativistic quantum mechanics. At the level of *Quantum Mechanics of One and Two Electron Systems* by Bethe and Salpeter.

578. STATISTICAL MECHANICS AND KINETIC THEORY. Spring term. Credit three hours. Prerequisites, Physics 571 and 572, or consent of the instructor. M W F 10. Mr. MORRISON.

Statistical mechanics: general principles and applications to the properties of gases, liquids, crystals, and transport phenomena. At the level of *Statistical Physics* by Landau and Lifshitz.

635. SOLID STATE PHYSICS. Fall term. Credit three hours. Prerequisite, Physics 572 or consent of the instructor. T Th S 11. Mr. SILSBEE.

An introduction to solid state physics including studies of crystal structure; mechanical, thermal, and electrical properties; magnetism; band structure; and selected topics.

636. ADVANCED SOLID STATE PHYSICS. Spring term. Credit three hours. Prerequisite, Physics 635 or consent of the instructor. T Th S 11. Mr. CHESTER.

Selected advanced topics in modern theoretical and experimental solid state physics; band theory, group theoretical considerations, optical properties, phonon physics, transport problems, magnetic and low-temperature behavior of solids. Frequent reference to current literature and conference material.

645. INTRODUCTORY NUCLEAR PHYSICS. Fall term. Credit three hours. Prerequisite, Physics 572 or consent of the instructor. M W F 11. Mr. SILVERMAN.

Properties of nuclei, detection of particles, alpha decay, fission and thermonuclear reactions, gamma decay, beta decay, two-nucleon systems, nuclear models, nuclear reactions.

646. HIGH-ENERGY PARTICLE PHYSICS. Spring term. Credit three hours. Prerequisite, Physics 645 or consent of the instructor. M W F 11. Mr. BERKELMAN.

The physics of nucleons, mesons, and strange particles from an experimental point of view. High energy phenomena, as opposed to classical nuclear physics, will be discussed. At the level of *An Introduction to Elementary Particles* by Williams.

651. ADVANCED QUANTUM MECHANICS. Fall term. Credit three hours. Prerequisite, Physics 573 or consent of the instructor. M W F 10. Mr. AMBEGAOKAR.

Relativistic wave equations, field theory, renormalization, problem of strong interactions, divergences of field theory. At the level of *Relativistic Quantum Field Theory* by S. Schweber.

654. THEORY OF MANY-PARTICLE SYSTEMS. Spring term. Credit three hours. Prerequisites, Physics 635 and 574, or consent of the instructor. M W F 12. Mr. MERMIN.

The equilibrium and transport properties of macroscopic systems of many particles are studied at zero and finite temperatures. The thermodynamic Green's function techniques are developed and applied to a variety of systems. Probable topics for discussion are: the electron gas at high densities, the normal Fermi liquid, superconductivity, ferromagnetism, and the anharmonic crystal.

[657. THEORY OF NUCLEI.] Fall term. Credit three hours. Prerequisites, Physics 574 and 645, or consent of the instructor. Offered in alternate years and only if registration exceeds nine students. M W F 9. Mr. NELKIN.

Selected topics from the theory of nuclei, including nuclear forces, nuclear structure, and nuclear reactions. Not offered in 1964-1965.]

662. THEORY OF HIGH-ENERGY PHENOMENA. Spring term. Credit three hours. Prerequisite, Physics 651 or consent of the instructor. Offered only if registration exceeds nine students. M W F 10. Mr. K. WILSON.

Topics of current interest in the theory of strong interactions. At the level of *Dispersion Relations* by Klein.

680. SEMINAR IN ADVANCED PHYSICS. Either term. Credit one to three hours a term. Upon sufficient demand, seminars will be arranged from time to time in topics not currently covered in regular courses. Typical seminar subjects are advanced solid-state theory, applied group theory, plasma physics, cosmic rays, general relativity theory, low-temperature physics, X-ray crystalline diffraction, magnetic resonance, etc.

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. J. J. GIBSON, *Chairman*; Messrs. U. BRONFENBRENNER, R. D. DARLINGTON, S. W. DAVIS, W. C. DILGER, J. E. HOCHBERG, H. J. JOHNSON, W. W. LAMBERT, R. C. LONGBAUGH, J. B. MAAS, R. B. MACLEOD, L. MELTZER, F. ROSENBLATT, T. A. RYAN, H. J. SIMMONS, Mrs. PATRICIA SMITH, Messrs. A. P. WOLF, and R. R. ZIMMERMANN.

THE MAJOR

Prerequisites for admission are:

- (a) Psychology 101, 201, and either 102 or 212;
- (b) A cumulative average of 75 in courses in Psychology;
- (c) Acceptance by the Department's admissions committee.

Application forms may be obtained at the departmental office and should be filed well in advance of the preregistration period. Also available is a mimeographed guide for prospective majors and for students who are electing psychology to meet the requirements of Distribution II. Ordinarily Distribution I requirements can be met most appropriately through basic courses in the following fields: anthropology, biology, chemistry, linguistics, literature, mathematics, philosophy, physics, sociology, and zoology.

Requirements for the major are:

(a) Three laboratory courses (12 hours), one of which must be at the 300 level and the others at the 300 level or above. Under special circumstances one of these may, at the discretion of the student's adviser, be waived.

(b) Sixteen additional hours in the major at the 300 level or above.

(c) Psychology 490, as partial preparation for a final comprehensive examination.

For additional courses in psychology students are advised to consult the Announcements of the College of Home Economics, the College of Agriculture, the School of Education, and the School of Industrial and Labor Relations. With the permission of the adviser, the following courses may be accepted as meeting the major requirements: Anthropology 441, Child Development and Family Relationships (HE) 301, 315, 374; Conservation (Agr) 490; Industrial and Labor Relations 311 (as alternate for Psychology 471); Interdepartmental Courses 301-302, 404; Rural Education (Agr) 451, 453, 454 (as alternate for Psychology 471); Sociology 382, 384, 481, 582, 681.

CONCENTRATION IN SOCIAL PSYCHOLOGY:

Students who wish to concentrate in social psychology may major in either psychology or sociology. In psychology, the student should meet the major requirement (b) (above) by taking the following courses: (a) Anthropology 301 or 312; (b) Sociology 441 or 442; (c) Psychology 341; (d) Sociology 382; (e) one of the following: Psychology 346, 571, 573, Sociology 481, 582, 681. Underclassmen may, if they wish, obtain an introduction to some facets of social psychology in any one of the following: Psychology 102, 208, Sociology 261, 264, 281.

THE HONORS PROGRAM:

Prospective candidates for Honors are encouraged to file applications for provisional Honors status as early as possible but not later than the spring term of the junior year. For acceptance, the candidate must have a departmental grade average of 85 at this time.

Honors students are given the opportunity for experience in original investigation with the help of members of the faculty. They are encouraged to read in accordance with their own interests. Accordingly, they take an Honors seminar (491) and prepare a thesis (492). Final Honors standing is based mainly upon a final comprehensive examination, a written thesis, and an oral defense of the thesis.

DISTRIBUTION REQUIREMENTS:

The Distribution I requirement in Social Sciences is satisfied in psychology by Psychology 101 and 102 or by one of these and either 208 or 212. Recommended sequences for Distribution II will be found in the mimeographed guide available at the departmental office.

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 AS A NATURAL SCIENCE. 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 as-

signed. Spring term: lectures, M W F 10, sections to be assigned. Mr. MAAS.

Concerned with the behavior of organisms, both animal and man. The course emphasizes the study of basic processes, including the

following: neural mechanisms; sensation and perception; simple learning, thinking, and memory; biological drives and the emotions.

102. INTRODUCTION TO PSYCHOLOGY AS A SOCIAL SCIENCE. Either term. Credit three hours. Open to freshmen. Psychology 101 not prerequisite. Three lectures and an optional section meeting. Lectures, T Th S 10, sections to be announced. Staff.

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. Prerequisites, an introductory course in psychology. M W F 10. Mr. ZIMMERMAN.

The major facts and principles of psychology bearing on educational practice and theory. Human learning and abilities will be stressed. Recent advances in the area of programmed learning and auto-instructional techniques will be discussed in the light of contemporary learning theory.

Each student will construct and test an auto-instructional program in his area of special interest.

106. PSYCHOLOGY IN BUSINESS AND INDUSTRY. Spring term. Credit three hours. Prerequisite, Psychology 101 or 102 or consent of instructor. M W F 11. Mr. MAAS.

Applications of psychological methods in advertising, market and motivation research, personnel selection and training (interviewing, testing), business and industrial counseling, executive development (creativity, group dynamics), conditions of efficient production (methods and job satisfaction), accident control.

201. INTRODUCTION TO EXPERIMENTAL PSYCHOLOGY. Spring term. Credit four hours. Prerequisites, Psychology 101 or 102, or consent of instructor. Lectures M W (F) 10. Laboratory F 8-10, 10-12, 2-4, or S 8-10. Mr. SIMMONS.

An analysis of current and classical research problems selected for their relevance to general theoretical issues and illustrative of modern research methods in psychology. Specific topics will be chosen from the fields of perception, learning, motivation, personality theory, and the like. Provides an introduction to laboratory methods and statistical analysis prerequisite to many of the advanced courses in psychology.

[208. INTRODUCTION TO PERSONALITY AND SOCIAL PSYCHOLOGY. Spring term. Credit four hours. Prerequisite, Psychology 101 or 102. Lectures, T Th (S) 11. Sections to be assigned. Mr. MELTZER and staff. Not given in 1964-1965.]

212. MODERN PSYCHOLOGY IN HISTORICAL PERSPECTIVE. Spring term. Credit four hours. Prerequisite, Psychology 101 or 102, or consent of instructor. Lectures, M W F 12. Mr. ROMMETVEIT.

An examination of the broad problems of psychology, e.g., mind and body, the basis of knowledge, the basis of conduct, as they have been envisaged at various periods of history. Special emphasis is laid on the relation between psychological thinking and development in philosophy, religion, the sciences, literature, and the arts. Designed for the general student; recommended but not required for prospective majors.

THE SOCIAL PSYCHOLOGY OF GROUPS. (Sociology 281). Credit three hours. Prerequisite: A course in sociology. M W F 11. Mr. HAYES.

Analysis of the structure of groups and group processes in terms of contemporary social psychological and sociological frames of reference. Survey of the findings of research from field and laboratory settings and an analysis of observational, survey, and experimental methods of research bearing upon groups.

305. BASIC PROCESSES: PERCEPTION. Fall term. Credit four hours. Prerequisites, Psychology 201 or consent of instructor. Lectures M W 12, Laboratory, Th 1:40-4. Mr. GIBSON.

An account of the ways in which we register and apprehend the environment. The experimental study of sensory input, of psychophysical correspondence, of space, motion, objects, and events, and the relation of perceiving to everyday behaving and thinking.

306. BASIC PROCESSES: LEARNING. Spring term. Credit four hours. Prerequisite, Psychology 201 or consent of instructor. Lectures T Th 10. Laboratory, Th 1:40-4. Mr. ZIMMERMANN.

The fundamental conditions and principles of learning, both animal and human. The basic phenomena of operant conditioning, human verbal and motor learning, discrimination learning and serial learning will be studied experimentally. Traditional and contemporary theories of learning will be reviewed and selected experimental literature will be discussed with special emphasis upon recent developments in the field.

307. BASIC PROCESSES: MOTIVATION. Fall term. Credit four hours. Prerequisites, Psychology 201 or consent of instructor. Lectures W F 9. Laboratory, T 1:40-4. Mr. RYAN.

Factors controlling the initiation, direction, and intensity of activity. Methods of research with emphasis upon experimental and statistical controls. Evaluation of evidence on major theories of motivation such as instinct theory, psychoanalysis, and behavioristic drive theory.

[309. SOCIAL PERCEPTION, ATTENTION, AND COMMUNICATION. Fall term. Credit four hours. Prerequisites, Psychology 201 or consent of instructor. Mr. HOCHBERG. Not offered in 1964-1965.

Research methods and findings in the analysis of our apprehension of people, their intentions, and other social qualities and events. Fundamental experimental techniques applied to the registrations of human characteristics as these affect, and are affected by, variables of attitude, interpersonal relationships, and relationships between groups of people.]

[311. FEELING AND EMOTION. Fall term. Credit four hours. Prerequisite, 9 hours in Psychology or consent of instructor. M W F 10. Mr. ———. Not offered in 1964-1965.]

313. PSYCHOLOGY OF LANGUAGE AND THINKING. Fall term. Credit four hours. Prerequisites, six hours of psychology and upperclass standing. M W F 12. Mr. ROMMETVEIT.

An approach to the psychological study of thinking through the analysis of the processes of communication. Material will be drawn from studies of linguistic development, from the pathology of language, from comparative linguistics, and from experimental studies of language and thinking. For students of philosophy, language, and literature as well as for students of psychology.

BRAIN MECHANISMS AND MODELS (Interdepartmental Course 301-302). Throughout the year. Credit four hours a term. Prerequisites, calculus, graduate or advanced undergraduate standing, and consent of instructor. Lecture, W 2, with additional hours to be arranged. Mr. ROSENBLATT, with assistance of Mr. BLOCK and guest lecturers.

323. PHYSIOLOGICAL PSYCHOLOGY. Fall term. Credit four hours. Prerequisites, Psychology 101, three additional hours of psychology, one year of biology or zoology or physiology, and one term of statistics; one of the prerequisites may be taken concurrently. M 2-3, W 2-4. Mr. SIMMONS.

A survey of research on the physiological bases of behavior.

324. PSYCHOBIOLOGY. Spring term. Credit four hours. Prerequisite, a grade of at least 85 in Psychology 323 and consent of instructor. Two hours of group work and six hours per week of individual laboratory work to be arranged. Mr. SIMMONS.

The laboratory work will permit the student to master techniques, repeat important experiments, or conduct original work in physiological psychology. In the discussion session, students will present the results of their work or reviews of research in physiological psychology.

325. ABNORMAL PSYCHOLOGY. Fall term. Credit four hours. Prerequisites, nine hours of psychology, or consent of instructor. T Th S 10. Mr. JOHNSON.

An introduction to the study of disordered behavior. Description of major syndromes, investigations and theories of etiology, and approaches to treatment will be covered in an attempt to introduce the student to major concepts and problems in this area.

326. COMPARATIVE PSYCHOLOGY. Fall term. Credit four hours. Prerequisites, six hours of psychology beyond the 100 level. Some knowledge of physiology or physiological psychology is desirable. Lectures, T Th 11. Laboratory to be arranged. Mr. ZIMMERMAN.

An attempt to uncover the evolutionary and ecological processes at work molding the behavior of animals. Principles will be advanced and used to design representative types of behavior in hypothetical animals. Detailed consideration will then be given to the analysis of the behavior of existing insects, birds, and mammals. Psychological and ethological theories of animal behavior will be discussed, especially the views of these theories toward the evolution of behavior.

331. INDUSTRIAL PSYCHOLOGY: SELECTION AND PLACEMENT. Fall term. Credit four hours. Prerequisites, 101 or 102 and 201. M W F 11. Mrs. SMITH.

Principles of constructing and evaluating selection and placement measures, including development of criteria of performance, analysis of reliability, methods of item-analysis, validation of tests, interviews, and personal history data. 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.

332. INDUSTRIAL PSYCHOLOGY: PROBLEMS AT WORK. Spring term. Credit four hours. Prerequisites, Psychology 101 or 102, and 201. M W F 9. Mrs. SMITH.

A survey of the external and internal factors which affect the efficiency, speed, and accuracy of human work, and the feelings which accompany it. Consideration will be given to sedentary or "mental" work, in relation to fatigue, monotony, rest, sleep, and the effects of noise, light, temperature, incentives, and social factors. The effects of the task itself, as in "automated" work, will be considered. The class will obtain experience in such techniques as job evaluation and merit rating, and evaluation of fatigue and effort.

[335. PSYCHOLOGICAL PROBLEMS OF ADVERTISING AND MARKET RESEARCH. Fall term. Credit four hours. Prerequisite, Psychology 201 or consent of instructor. T 2-4, plus one hour to be arranged. Mr. HOCHBERG. Not offered in 1964-1965.]

341. SOCIAL PSYCHOLOGY. Fall term. Credit four hours. Prerequisites, 3 hours of psychology and 3 hours of sociology or 3 hours of anthropology and a course in statistics, or consent of instructor. M W F 10. Mr. LAMBERT.

Analysis of the history, concepts, methods, and theories used to describe and conceptualize some recurrent processes in social behavior. The processes of socialization, attitude change, and communication will be given special emphasis. Field observation methods, content analysis, attitude measurement and scaling, measures of meaning, and cross-cultural method will be discussed and exemplified. Students will have the opportunity to obtain some experimental laboratory experience. The work of some modern essayists in the field will be critically discussed.

This course constitutes one half of a full-year sequence in social psychology. The other half, which is listed as Sociology 382, may be counted toward the major in psychology. These courses may be taken separately.

SOCIAL PSYCHOLOGY. (Sociology 382). Spring term. Credit four hours. Prerequisites, 3 hours of psychology and 3 hours of sociology, and a course in statistics, or consent of instructor. T Th (S) 10. Mr. —.

Analysis of the ways in which people react to one another. The processes of interpersonal influence, conformity to norms and roles, leadership, hostility, and attraction will be given special emphasis. Experimental methods, controlled observation of groups in laboratory settings, and sociometric methods will be critically discussed and exemplified. Students will

have opportunity to obtain some experimental laboratory experience.

This course constitutes one half of a full-year sequence in social psychology. The other half, which is listed as Psychology 341, may be counted toward the major in sociology. These courses may be taken separately.

GROUP DYNAMICS (Sociology 384). Spring term. Credit four hours. Prerequisites, permission of the instructor and a course in either methodology or statistics. M W F 2-3 and M 3-4 or W 3-4. Mr. LONGABAUGH.

A description and analysis of the relationships between individuals and groups. Two dimensions are analyzed interdependently: the properties of groups and their effects on individuals, and the individual as a group participant and his effect on the group. Among topics included are group structure, processes, and roles; interaction, social perception, and choice; personality input and output.

This course departs from the more traditional course structure. The context for learning is provided by the group itself. Each group has two main functions: (1) to interrelate readings, lectures, and the experiences provided by the group participation; (2) to extrapolate hypotheses from this correlation and attempt to evaluate their fertility through the observation of a second class group.

346. THEORIES OF PERSONALITY. Spring 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.

Primarily For Seniors And Graduate Students

401. PSYCHOLOGICAL TESTING I. Fall term. Credit four hours. Prerequisites, six 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 S 9. Mr. JOHNSON.

Survey of current theory and research in the field of individual differences and personality. A number of lines of investigation will be studied in detail with some emphasis on technique.

412. RESEARCH METHODS IN CLINICAL PSYCHOLOGY. Spring term. Credit four hours. Prerequisites, Psychology 201 and a psychology major, or consent of instructor. M W F 11. Mr. DARLINGTON.

Primary emphasis is on problems related to the use of objective assessment procedures in clinical psychology and personality. Some related topics will also be discussed.

[414. PRACTICUM AND SEMINAR IN PSYCHOLOGICAL TESTING.] Spring term. Credit four hours. Prerequisite, Psychology 401 or 402. All students must have consent of instructor. Hours to be arranged. Mr. ———. Not given in 1964-1965.]

426. EXPERIMENTAL PSYCHOPATHOLOGY. Spring term. Credit four hours. Prerequisites, Psychology 325 or consent of instructor. M W F 10. Mr. JOHNSON.

The application of experimental methods to behavior disorders. A survey of current investigations of etiology and treatment with special emphasis upon a scientific approach to the study of behavior psychology.

COMPARATIVE VERTEBRATE ETHOLOGY (Agr: Conservation 450). Fall term. Credit three hours. Prerequisites, Conservation 207-208 and permission of instructor. T Th 9 and laboratory to be arranged. Primarily for graduate students; upperclassmen will be accepted to capacity of laboratory. Mr. DILGER.

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. Offered in

C. D. and F. R., College of Home Economics, in 1964-1965.

SEMINAR: THE INDIVIDUAL AND THE FAMILY IN CHINESE SOCIETY (Anthropology 441). Fall term. Credit four hours. Prerequisites, Anthropology 312 or 343, Psychology 208 or 341, Sociology 382, or consent of instructor. M W F 10. Mr. WOLF.

[461. ADVANCED LEARNING THEORY.] Fall term. Credit four hours. Prerequisite, Psychology 306 or permission of the instructor. For upperclassmen and graduate students. M W F 11. Mr. ———. Not offered in 1964-1965.]

[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. Mr. ———. Not offered in 1964-1965.]

466. THEORIES OF VISION. Spring term. Credit four hours. Prerequisite, consent of instructor. T Th S 11. Mr. ———.

Examination of modern explanations of visual cognition, with particular emphasis on problems important to an understanding of central processes and mechanisms.

471-472. STATISTICAL METHODS IN PSYCHOLOGY. Throughout the year. Credit four hours each term. Prerequisites, Psychology 101 or 102, 201 or consent of the instructor. Psychology 471 is prerequisite to 472. Fall term, M W F 2; Spring term, M W F 2. Mr. RYAN.

An analysis of the methods for treating various kinds of psychological data. Fall term: tests of significance and confidence limits, analysis of variance and correlation. Spring term: complex designs in analysis of variance, analysis of trends and covariance, multiple and curvilinear correlation, introduction to factor analysis.

[476. RESEARCH METHODS IN PSYCHOLOGY—EXPERIMENTAL AND LABORATORY.] Fall term. Credit four hours. Prerequisite, consent of instructor. Hours to be arranged. Mr. SIMMONS. Not offered in 1964-1965.]

477. RESEARCH METHODS IN PSYCHOLOGY—INDUSTRIAL AND FIELD. Spring term. Credit four hours. Prerequisite, consent of instructor. T 3-5 plus laboratory hours to be arranged. Mrs. SMITH.

An advanced course in research techniques, focussed toward measurement of human behavior in the working situation. Projects in local factories and business institutions and in

the laboratory are conducted as exercises in such areas as test construction, analysis of the reliability and validity of tests, studies of the interview process, of morale, learning, methods, and fatigue. Stress will be placed upon both descriptive and evaluative measures, including rating, scaling, and the psychophysical methods, and upon design and sampling for maximal generality of results.

EXPERIMENTAL GROUP DYNAMICS (Sociology 481). Fall term. Credit four hours. Prerequisites, a course in statistics and a course in social or experimental psychology, or consent of instructor. Open to upperclassmen and graduate students. Lectures M W 2-3, Laboratory hours to be arranged. Mr. LONGABAUGH.

An introduction to the advanced literature of the field, and supervised research experience. Students will read and discuss technical reports of experimental studies of social interaction as well as pertinent theoretical articles. The focus will be upon analytic and experimental research on the concepts of social power and social exchange in interpersonal relationships.

486. SUPERVISED STUDY. Either term. Credit two hours. Staff.

487. SUPERVISED STUDY. Either term. Credit four hours. Staff.

490. SENIOR SEMINAR. Spring term. Credit four hours. Required of all senior students majoring in psychology except those in Honors. T 2-4. Mr. ———.

An examination of problems and viewpoints of general psychology in order to organize the specific knowledge gained in other courses. Class discussions will serve as a framework for the student's individual review and reading. The course will culminate in an examination designed to test the student's knowledge of the whole field. Students who have not taken Psychology 212 should be prepared to attend the lectures in that course.

Seminars For Honors Candidates

491. HONORS SEMINAR AND THESIS. Fall term, senior year. Credit four hours. Time to be arranged. Mr. ———.

492. HONORS THESIS. Spring term, senior year. Credit four hours. Time to be arranged. This will represent an investigation, under the supervision of a member of the staff, of a problem in any of the major fields of psychological research. Candidates will for the

most part work independently but may, from time to time, be called together for progress reports.

Graduate Courses And Seminars

Primarily for graduate students, but with the consent of the instructor may be taken by qualified undergraduates. Approximately five graduate courses or seminars will be offered each term, the selection to be determined by the needs of the students. During the preregistration period, the list of courses and seminars for the following term will be posted, specifying instructors, topics to be covered, and hours of meeting.

501-502. GENERAL SEMINAR FOR BEGINNING GRADUATE STUDENTS. Either term. Credit three hours.

511-512. PERCEPTION. Either term. Credit four hours.

513-514. LEARNING. Either term. Credit four hours.

515-516. MOTIVATION. Either term. Credit four hours.

517-518. THINKING. Either term. Credit four hours.

521-522. PSYCHOBIOLOGY. Either term. Credit four hours.

523-524. PHYSIOLOGICAL PSYCHOLOGY. Either term. Credit four hours.

531-532. HISTORY OF PSYCHOLOGY. Either term. Credit four hours.

541-542. STATISTICAL METHODS. Either term. Credit four hours.

543-544. PSYCHOLOGICAL TESTS. Either term. Credit four hours.

545-546. METHODS OF SOCIAL ANALYSIS. Either term. Credit four hours.

547-548. METHODS OF CHILD STUDY. Either term. Credit four hours.

561-562. HUMAN DEVELOPMENT AND BEHAVIOR. Either term. Credit four hours.

571-572. PROSEMINAR IN SOCIAL PSYCHOLOGY. Either term. Credit four hours.

PROSEMINAR IN SOCIAL PSYCHOLOGY. (See Sociology 582.)

573-574. **SOCIAL PSYCHOLOGY.** Either term. Credit four hours.

SEMINAR IN SOCIAL PSYCHOLOGY. (See Sociology 681.)

575-576. **PERSONALITY.** Either term. Credit four hours.

581-582. **INDUSTRIAL PSYCHOLOGY.** Either term. Credit four hours.

591-592. **EDUCATIONAL PSYCHOLOGY.** Either term. Credit four hours.

595-596. **THE TEACHING OF PSYCHOLOGY.** Either term. Credit four hours.

SOCIOLOGY

Mr. G. F. STREIB, *Chairman*; MESSRS. W. DELANY, A. G. FELDT, MRS. ROSE K. GOLDSSEN, MESSRS. D. P. HAYES, W. W. LAMBERT, A. H. LEIGHTON, R. C. LONGABAUGH, R. M. MARSH, R. MCGINNIS, L. MELTZER, G. C. MYERS, J. M. STYCOS, W. E. THOMPSON, R. M. WILLIAMS, JR.

There are three alternative majors available: (1) sociology; (2) sociology with a concentration in social psychology; (3) social relations.

SOCIOLOGY:

For a major in sociology the following courses must be completed: (a) 321, 330, 382 (or Psychology 341), 402, and 441; (b) twelve hours of electives at the 300 level or higher, including at least one course at the 400 level, four hours of which must be in sociology. Departmentally approved courses in other fields may be elected in special consultation with the major adviser. Majors will be required to pass a comprehensive examination in sociology.

As prerequisite for a major in sociology, students should normally offer Sociology 101-202, although Sociology 101 and an additional 200-level course is acceptable. In addition, the student must offer an approved course in statistics to be taken not later than the end of the junior year but preferably as a sophomore. For admission to the major a student must have an average of at least 75 in the prerequisite departmental courses and must be accepted by the departmental admissions committee. Ordinarily, students should apply for admission to the major no later than two weeks before the time of preregistration in the spring term.

Prospective majors are urged to take a year of college mathematics.

SOCIOLOGY WITH A CONCENTRATION IN SOCIAL PSYCHOLOGY:

In cooperation with the Department of Psychology, a concentration in social psychology is available. Students who wish to specialize in social psychology may major in either field. In sociology, the student who concentrates in social psychology must meet the prerequisites for a major in sociology (offering Psychology 201 to meet the statistics prerequisite). He must meet major requirements (a), and he also must meet requirements (b) by offering the following: Psychology 341 and one of the following: Anthropology 312; Sociology 481, 582, 681; Psychology 346, 571, 573, 574. In addition, the student is expected to take one course in experimental psychology (Psychology 305, 306, or 307).

SOCIAL RELATIONS:

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

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

- a. Either Anthropology 101 or Sociology 101.
- b. Either Psychology 101 or Psychology 102 or Psychology 208 or Sociology 281.
- c. Either Industrial and Labor Relations 210 or Psychology 201 (the latter is recommended for the student who intends to take advanced courses in psychology).

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

- a. Three pairs or other combinations of related courses at the 300 level or above, to be selected in consultation with the major adviser. These six courses must include two courses from each of the following disciplines: anthropology, social psychology, sociology.

b. At least one course in methods, to be selected from the following: anthropological methods, techniques of experimentation (psychology), methods in sociology, advanced psychological statistics, the philosophy of science or of social science, advanced statistics (such as *Industrial and Labor Relations 510*).

c. At least one course in theory which is related to social relations.

d. The senior seminar in social relations (*Sociology 495*, or *Anthropology 495*).

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

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

For admission to Honors Programs in social psychology and sociology students should file application on a form obtainable in the departmental office, not later than November 1 of their junior year. Honors candidates must have a general average of at least 80 and an average in departmental courses of at least 85, or show exceptional promise.

Specialized instruction is offered in *Sociology 491-492, Selected Topics in Sociology*. These courses are open to a limited number of upperclass majors only. Consent of the instructor is required.

Seminars may be taken by qualified undergraduates, with the consent of the instructor, except as otherwise noted in course listings.

The Distribution I requirement in Social Sciences is satisfied in sociology by *Sociology 101* and an additional semester course at the 200 or 300 level.

101. MAN AND SOCIETY. Either term. Credit three hours. Fall term: lectures, T Th (S) 10. Spring term: lectures, M W (F) 10. Discussion sections to be arranged. Mr. HAYES and staff.

An introduction to the principal questions, perspectives, and methods of sociology. The focus of the course will be upon the processes which maintain the continuity and stability of society and contribute to its change. Detailed analyses will be made of institutions and organizations, socialization and social control. Emphasis will be given to contemporary research in these areas.

202. GENERAL SOCIOLOGY. Spring term. Credit three hours. Prerequisite, *Sociology 101*. T Th S 10. Mr. HAYES.

A continuation of *Sociology 101*. Introducing social psychology, demographic analysis, human ecology, deviance, and social disorganization, and the methodological issues and problems of various fields. Primary sources in each of the fields will serve as the readings for this course.

204. GENERAL INTRODUCTION TO BEHAVIORAL SCIENCE. Spring term. Credit three hours. M W F 2. Mr. LEIGHTON.

Planned both for students intending to specialize in behavioral science and for those with more general interests. The approach will be selective, illustrative, and integrative, with emphasis on the development of theory through work on both human and animal behavior. It will deal first with the behavior of the individual, next with society as a system, and finally, with the practical applications and contributions of behavioral science.

262. PUBLIC OPINION. Spring term. Credit three hours. M W F 11. Mrs. GOLDSSEN.

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. Special emphasis is given to the techniques of propaganda, the functioning of pressure groups, and the role of the communication media of radio, television, press, and motion pictures in determining public opinion.

264. INTERGROUP RELATIONS: PREJUDICE, DISCRIMINATION, AND CONFLICT. Spring term. Credit three hours. Prerequisite, *Sociology 101* or consent of the instructor. T Th S 11. Mr. WILLIAMS.

An evaluation of relations among ethnic, racial, and religious groups in terms of the social psychology of intergroup hostility and conflict and the position and role of these groups in the larger community. Prejudice and discrimination will be analyzed for their social, psychological, political, and economic causes and effects. Social and political movements based on intolerance and efforts to resolve intergroup conflict will be examined, with special attention to current developments resulting from the desegregation of public schools.

281. THE SOCIAL PSYCHOLOGY OF GROUPS. Fall term. Credit three hours. Prerequisite, a course in sociology or consent of instructor. M W F 11. Mr. HAYES.

Analysis of the structure of groups and group processes in terms of contemporary social psy-

chological and sociological frames of reference. Survey of the findings of research from field and laboratory settings, and an analysis of observational, survey, and experimental methods of research bearing upon groups.

[**INTRODUCTION TO PERSONALITY AND SOCIAL PSYCHOLOGY** (Psychology 208). Spring term. Credit four hours. Prerequisite, Sociology 101 or Psychology 101 or consent of the instructor. T Th 11. Messrs. LAMBERT, MELTZER. Not offered in 1964-1965.]

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 2. The hours for a research practicum to be arranged. Mr. ———.

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 3-4, and one hour to be arranged. Mr. STYCOS.

The practical and scientific significance of population growth and composition. Fertility, migration, and mortality in relation to social and cultural factors and in relation to questions of population policy. National and international data will receive approximately equal emphasis.

[**331. AMERICAN COMMUNITIES.** Fall term. Credit four hours. Open to upperclassmen majoring in the social sciences and to graduate students or by consent of the instructor. M W F 11. Mr. THOMPSON. Offered in alternate years. Not offered in 1964-1965.]

332. INTRODUCTION TO HUMAN ECOLOGY. Spring term. Credit four hours. M W F 12. Mr. FELDT.

An examination of the form and development of the human community with respect to spatial, temporal, and functional patterns of organization. Demographic, environmental, and technological characteristics are treated as parameters relevant to the ecological structure of the community.

[**341. EDUCATIONAL SOCIOLOGY.** Fall term. Credit four hours. Prerequisite, Sociology 101 or consent of the instructor. M W F 9. Mr. THOMPSON. Not offered in 1964-1965.

An examination of educational institutions in the context of contemporary culture and society, emphasizing the dynamics of school-community relationships. The study of educational

institutions as social systems will also be included.]

343. THE FAMILY. Fall term. Credit four hours. Prerequisite, Sociology 101, or consent of the instructor. M W F 9. Mr. STREIB.

The family in various cultures but particularly in American society, from the standpoint of its organization and relation to other social institutions. Emphasis is placed upon the family's major social functions (reproduction, maintenance, socialization, and the conferring of status) and upon the cyclical features of the family (courtship, marriage, parenthood, and dissolution).

344. RELIGION IN WESTERN SOCIETY. Spring term. Credit four hours. Prerequisite, Sociology 101, or consent of the instructor. M W F 9. Mr. STREIB.

The interrelationship of culture, society, and religion. Religion and social stratification, religion and economic and political institutions, social change and religion. The major emphasis will be upon American society and American religious institutions.

345. CLASS, STATUS, AND POWER. Fall term. Credit four hours. Prerequisite, Sociology 101, or consent of the instructor. M W F 11. Mr. MARSH.

A study of theories and research dealing with the nature, conditions, and consequences of systems of socio-economic inequality in, mainly, American communities and society. Focuses upon status; occupational, income, and power hierarchies; patterns of vertical social mobility; interrelationships of the hierarchies and their changes since the industrial revolution. Implications of socio-economic stratification for politics and government, individual styles of life, life chances and the general integration, effectiveness and stability of societies.

347. BUREAUCRACY IN MODERN SOCIETY. Fall term. Credit four hours. Prerequisite, Sociology 101 or consent of the instructor. T Th S 10. Mr. ———.

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 individual-

istic, democratic, and humane traditions of American society.

348. POLITICAL SOCIOLOGY. Spring term. Credit four hours. Open to upperclassmen majoring in the social sciences and to graduate students or by consent of the instructor. M W F 10. Mr. ———.

An examination of political institutions as sociological phenomena with emphasis on the empirical study of political behavior. Cultural and social factors associated with political structure, political attitudes, and political behavior. Political decision making as a sociological process.

350. COMPARATIVE SOCIAL STRUCTURE. Spring term. Credit four hours. Prerequisite, Sociology 101. M W F 11. Mr. MARSH. Offered in 1964-1965 and alternate years.

Structural-functional analysis of the constant and variable features of large-scale industrial and pre-industrial societies, such as China, Japan, the Soviet Union, and the United States. The universality of sociological propositions, originally tested with American data, in the light of data from other societies.

362. SOCIETY AND ECONOMIC DEVELOPMENT. Spring term. Credit four hours. Prerequisite, Sociology 101 or consent of the instructor. M W F 9. Mr. ———.

Applies sociological concepts and theories of historical development of Western industrial societies to selected problems of "modernization" in the contemporary world. Locates patterns and variations in relationships between economic development of societies and changes in their (1) population and ecology, (2) family and kinship systems, (3) community and administrative organizations, (4) stratification, (5) political systems, (6) communications media, and (7) institutionalized ideologies.

363. MASS SOCIETY, POLITICS, AND CULTURE. Fall term. Credit four hours. Prerequisite, Sociology 101 or consent of the instructor. M W F 10. Mr. ———.

Within the general study of collective behavior the focus is upon a critical examination of theories of "mass society" and "mass culture" advanced by such writers as Ortega y Gasset, W. Lippmann, C. W. Mills, D. MacDonald, K. Mannheim, and W. Kornhauser in light of evidence from social research. The nature of "mass society" in contrast to other forms, its historical conditions and its consequences for, especially, politics, government, and both the fine and popular arts will be considered.

382. SOCIAL PSYCHOLOGY. Spring term. Credit four hours. T Th (S) 10. Mr. ———.

Prerequisite, three hours of psychology and three hours of sociology, and a course in statistics, or consent of instructor.

Analysis of the ways in which people react to one another. The processes of interpersonal influence, conformity to norms and roles, leadership, hostility, and attraction will be given special emphasis. Experimental methods, controlled observation of groups in laboratory settings, and sociometric methods will be critically discussed and exemplified. Students will have opportunity to obtain some experimental laboratory experience.

This course constitutes one half of a full-year sequence in social psychology. The other half, which is listed as Psychology 341, may be counted toward the major in sociology. These courses may be taken separately.

384. GROUP DYNAMICS. Spring term. Credit four hours. Prerequisite, permission of the instructor and a course in either methodology or statistics. M W F 2, and M 3 or W 3. Mr. LONGABAUGH.

A description and analysis of the relationship between individuals and groups. Two dimensions are analyzed interdependently: the properties of groups and their effects on individuals, and the individual as a group participant and his effect on the group. Among topics included are group structure, processes, and roles; interaction, social perception, and choice; personality input and output. This course departs from the more traditional course structure. The context for learning is provided by the group itself. Each group has two main functions: (1) to interrelate readings, lectures, and the experiences provided by the group participation; (2) to extrapolate hypotheses from this information and attempt to evaluate their fertility through the observation of a second class group.

SOCIAL PSYCHOLOGY (Psychology 341). Fall term. Credit four hours. Prerequisite, three hours of psychology and three hours of sociology or three hours of anthropology, and a course in statistics or consent of the instructor. M W F 10. Mr. LAMBERT.

Analysis of the history, concepts, methods, and theories used to describe and conceptualize some recurrent processes in social behavior. The processes of socialization, attitude change, and communication will be given special emphasis. Field observation methods, content analysis, attitude measurement and scaling, measures of meaning, and cross-cultural method will be discussed and exemplified. Students will have the opportunity to obtain some experimental laboratory experience. The

work of some modern essayists in the field will be critically discussed.

This course constitutes one half of a full-year sequence in social psychology. The other half, which is listed as Sociology 382, may be counted toward the major in psychology. These courses may be taken separately.

THEORIES OF PERSONALITY. (Psychology 346). Spring 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.

402. SOCIAL THEORY. Spring term. Credit four hours. Open to majors and graduate students. M W 2-3:30. Mr. MYERS.

Survey of selected theories and concepts in contemporary sociology reviewed in historical perspective, in relation to the contributions of other social sciences, and in terms of present-day developments in theory and research. Throughout, emphasis will be placed on trends in contemporary social theory.

404. STUDIES IN SOCIOLOGY. Spring term. Credit four hours. T Th 3. Mr. ———.

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. 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 3-4:30. Mr. MCGINNIS.

Elementary measurement theory is examined as a basis for constructing social variables.

Guttman's ordinal scale theory is considered in detail. Equal-interval measurement techniques of psychophysics are applied to other concepts such as social perception, status, and anomie. Factor analysis is evaluated as a tool of theory and research.

423. ANALYSIS OF SURVEY DATA. Fall term. Credit four hours. Open to upperclass majors and graduate students with the consent of the instructor. Th 4-6. Mrs. GOLDSSEN.

In the first semester, instruction and practice are given in all steps of survey analysis, using materials from current studies conducted in the Department. Treatment of editing, classifying, and coding data. Review and application of simple statistical techniques. Scales, scores, and other composite indexes are developed and used in analysis. Continuous emphasis is given to adequacy of research design and logic of analytical inference. All exercises are written by the students as research reports.

424. ANALYSIS OF SURVEY DATA. Spring term. Credit four hours. Open to upperclass majors and graduate students with the consent of the instructor. Th 4-6. Mrs. GOLDSSEN.

This is the continuation of Sociology 423. The second semester emphasizes the equivalent problems which arise in analyzing qualitative research materials, unstructured interviews, content analysis of documents, life history materials, and the like.

425. TECHNIQUES OF DEMOGRAPHIC RESEARCH. Fall term. Credit four hours. Prerequisite, Sociology 330 or consent of the instructor. T Th S 11. Mr. MYERS.

Methods of processing and analyzing demographic data. Measures of mortality, fertility, and migration as applied to census and vital statistics data will be analyzed, and the more general applications of demographic techniques to other classes of data illustrated.

432. REGIONAL POPULATION ANALYSIS. Spring term. Credit four hours. Prerequisite, Sociology 330 or consent of the instructor. T Th S 11. Mr. MYERS.

Research application of basic demographic techniques to selected regions of the world, particularly the economically less-developed regions. Attention is directed to field survey techniques, including sampling and questionnaire construction, as well as formal demographic analysis. Students may work on selected research projects for the semester.

433. INTERNATIONAL URBANIZATION. Fall term. Credit four hours. M W F 12. Mr. FELDT.

An examination and appraisal of the growth and development of urban communities in developing nations. The structure and composition of such communities and their relationship to a regional economy are compared with similar phenomena in the Western world.

441. STRUCTURE AND FUNCTIONING OF AMERICAN SOCIETY—I. Fall term. Credit four hours. Prerequisite, Sociology 101 or consent of the instructor. T Th S 9. Mr. WILLIAMS.

Systematic analysis of the major institutions of kinship, stratification, economic activity, political structure, education, and religion. Special attention is given to values and their interrelations in the modern social order. A survey of the more important types of groups and associations making up a pluralistic nation is included.

442. STRUCTURE AND FUNCTIONING OF AMERICAN SOCIETY—II. Spring term. Credit four hours. Prerequisite, Sociology 441 or consent of the instructor. T Th S 9. Mr. WILLIAMS.

Primary attention is directed to the study of interrelations of institutions, including analysis of the regulation of economic and political systems. Group cooperation and conflict are surveyed. Analysis of important processes of change in institutions, values, and social organizations.

[**444. SOCIAL STRATIFICATION PROSEMINAR.** Spring term. Credit four hours. T 2-4. Mr. MARSH. Not offered in 1964-1965.]

481. EXPERIMENTAL GROUP DYNAMICS. Fall term. Credit four hours. Prerequisites, a course in statistics, and a course in social or experimental psychology, or consent of the instructor. Open to upperclassmen and graduate students. M W 2. Laboratory hours to be arranged. Mr. LONGABAUGH.

An introduction to the advanced literature of the field, and supervised research experience. Students will read and discuss technical reports of experimental studies of social interaction, as well as pertinent theoretical articles. The focus will be upon analytic and experimental research on the concepts of social power and social exchange in interpersonal relationships.

491. SELECTED TOPICS IN SOCIOLOGY. Fall term. Credit four hours. Open only to majors. Hours to be arranged. Staff.

492. SELECTED TOPICS IN SOCIOLOGY. Spring term. Credit four hours. Open only to majors. Hours to be arranged. Staff.

493. HONORS SEMINAR. Fall term. Credit four hours. Prerequisite, acceptance as candidate for Honors. Hours to be arranged. Mrs. GOLDSSEN and Staff.

494. HONORS SEMINAR. Spring term. Credit four hours. Prerequisite, acceptance as candidate for Honors. Hours to be arranged. Mrs. GOLDSSEN and Staff.

495. SOCIAL RELATIONS SEMINAR. Fall term. Credit four hours. Open only to seniors majoring in social relations. Hours to be arranged. Mr. ———.

511. THEORY OF CULTURE AND SOCIAL ORGANIZATION. Fall term. Credit four hours. Prerequisite, Sociology 402 or equivalent. T Th S 11. Mr. WILLIAMS.

Analysis of recent conceptual development in theories of cultural and social systems. Special attention will be given to the work of Talcott Parsons and associates, with comparative study of alternative conceptual schemes.

512. HISTORY OF SOCIOLOGICAL THEORY. Spring term. Credit four hours. Open to majors and graduate students. T Th 2-3:30. Mr. MARSH. Offered in 1964-1965.

Consideration of the works of leading sociological theorists and major trends of development in sociological thought, with particular reference to the nineteenth and twentieth centuries. The classical works by Spencer, Marx, Weber, Durkheim, Pareto, Simmel, and others will be read. Emphasis will be upon extracting testable propositions which are viable in terms of present-day theory.

513. DEMOGRAPHIC THEORY. Fall term. Credit four hours. Open to majors and graduate students. T 3-5. Mr. MYERS.

Deals with theory construction, hypothesis derivation, and the integration of theory and research in demography. Although emphasis is placed on contemporary theories, earlier formulations beginning with Malthus also are examined insofar as they deal with fertility, mortality, migration, and the people-resource question.

[**514. PROSEMINAR IN COMPARATIVE BUREAUCRACY.** Spring term. Credit four hours. Hours to be arranged. Mr. ———. Not offered in 1964-1965.]

522. METHODOLOGY. Spring term. Credit four hours. Prerequisites, an introductory methods and statistics course or consent of the instructor. F 2-4. Mr. MCGINNIS.

Science is considered as a model process, both axiomatic and experimental. Sociology is evalu-

ated 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 social change.

524. SEMINAR: SOCIOLOGICAL APPLICATION OF GAME AND DECISION THEORY. Spring 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.

N-person zero and non-zero sum games are interpreted as representations of social exchange behavior. Applications to such diverse phenomena as task-oriented, small-group interaction and social-control mechanisms are studied.

541. SOCIAL ORGANIZATION AND CHANGE. Fall term. Credit four hours. T Th 2-3:30. Mr. MARSH.

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.

582. PROSEMINAR IN SOCIAL PSYCHOLOGY. Fall term. Credit four hours. T 4-6. Mr. LONGBAUGH.

Critical analysis of the major current perspectives in social psychology.

PROSEMINAR IN SOCIAL PSYCHOLOGY. (Psychology 571-572).

611. SEMINAR: THEORY AND RESEARCH. Fall term. Credit four hours. Hours to be arranged. Mr. ———.

612. SEMINAR: RESEARCH ON HUMAN FERTILITY. Spring term. Credit four hours. T 4-6. Mr. STYCOS.

Critical analysis of recent research investigations dealing with social and psychological factors affecting human fertility.

613. SEMINAR: THEORY AND RESEARCH. Fall term. Credit four hours. W 2-4. Mr. WILLIAMS.

Critical analysis of research in intergroup relations.

614. SEMINAR: THEORY AND RESEARCH IN CHINESE SOCIAL STRUCTURE. Spring term. Credit four hours. Hours to be arranged. Mr. MARSH.

615-616. DIRECTED RESEARCH. Either term. Credit to be arranged. Hours to be arranged. Staff.

617. SEMINAR: THEORY AND RESEARCH. Fall term. Credit four hours. Hours to be arranged. Mr. ———.

618. SEMINAR: THEORY AND RESEARCH. Spring term. Credit four hours. Hours to be arranged. Mr. ———.

681. SEMINAR IN SOCIAL PSYCHOLOGY. Spring term. Credit four hours. Hours to be arranged. Mr. LAMBERT.

SPEECH AND DRAMA

Mr. G. A. McCALMON, *Chairman*; MESSRS. H. D. ALBRIGHT, J. P. BAKKE, M. A. CARLSON, E. C. NUTTALL, R. ROBERTSON, W. H. STANTON, J. F. WILSON, and Staff.

The Department of Speech and Drama offers a broad and varied curriculum in the arts and sciences that relate to oral communication and interpretation. The aim of the Department is to provide sound preparation for those who would understand speech as a liberal art and for those who will later make use of it in a variety of careers in such areas as law, teaching, business administration, and educational and community theatre.

Students may elect a major with emphasis on either speech or drama. All majors must complete the following underclass courses: 233, either 103-104 or 105-106 or equivalent, and one course from 205, 234, 285. Twenty additional hours of upperclass work in the Department are required of all majors.

Courses to be completed outside the Department but as an integral part of the major are as follows. Majors concentrating in speech must complete at least four hours of upperclass course work in linguistics or psychology of language and thinking. In addition each major in speech

must elect at least eight hours of approved, upperclass work in psychology, history, or literature. Majors concentrating in drama must elect at least twelve hours of approved upperclass work in dramatic literature, history of art, sociology, anthropology, or psychology.

Students wishing to graduate with Honors in speech and drama should make application to the Chairman at the beginning of their junior year. For provisional acceptance as a candidate for Honors, a student must have chosen speech or drama as his major, have a cumulative average of 80 for all work done in the College, and have no grades below 80 for courses in speech and drama.

The Distribution I requirement in the Expressive Arts is satisfied in speech and drama by Speech and Drama 103-104 or 105-106.

For satisfaction of Distribution II requirements the Department suggests as representative the following paired or sequential courses: 233-234, 273-273, 283-285, 301-302, 341-345, 375-376, 391-392, 401 and either 402 or 413. Representative four-course combinations are: 233-234-341-345, 273-273-391-392, 283-285-381 and 385 or 386, 301-302-401 and 402 or 413.

Students who plan to teach speech and drama in the secondary schools should secure from the departmental office the schedule of courses approved for provisional certification in New York State. For those planning to teach English the Department recommends Courses 233, 281, 283, 285, 301.

103-104. PUBLIC ADDRESS AND DRAMA AS PERFORMING ARTS. Throughout the year. Course 103 repeated in spring term. Credit three hours a term. First term prerequisite to the second. M W F 11. Course 103, Mr. ———. Course 104, Mr. ALBRIGHT.

An introduction to oral and dramatic communication through intensive practice in public address and acting. The work of the course is developed through a series of performance units, each related to a specific cluster of principles governing the projection of meaning, rhetorical or dramatic. The student is required to generalize from both immediate experience and theoretical analysis and to deal ultimately with the bases of criticism in rhetorical and dramatic arts.

The first term, devoted primarily to public speaking, explores problems of audience analysis, discovery, and arrangement of ideas, language choice, and delivery. The second term begins with the reading of imaginative material from the printed page, covers the adaptation of speech and action to the special requirements of the stage, and focuses on characterization in projects of increasing complexity and scope.

Intended primarily for students in the College of Arts and Sciences. Not open to students who have taken Speech and Drama 105-106, or 201.

105-106. PRINCIPLES OF SPEECH AND THEATRE ARTS. Throughout the year. Credit three hours a term. First term prerequisite to the second. T Th S 10. First term, Messrs. NUTTALL and WILSON. Second term, Mr. ALBRIGHT.

An introduction to oral communication exploring the limitations and potentialities of speech, particularly in public address and the drama. The first term examines how and why man speaks, with special attention to utterance

and rhetorical composition as social instruments. The second term enlarges the scope of the basic material, developing speech and action as essential elements in dramatic communication and introducing such additional considerations as scenic design and space relationships within the playhouse.

Not a performance course; lectures, readings, discussions, and demonstrations. Not open to students who have taken Speech and Drama 103-104.

300. INDEPENDENT STUDY IN SPEECH AND DRAMA. Either term. Credit four hours. Open to upperclassmen prepared for independent study in speech or drama. Permission to register must be secured through the departmental office. Members of the Department.

Individual study of special topics. Students who plan to teach speech and drama are expected to complete certain advanced work in teaching methods or hearing problems through independent study under supervision of an appropriate adviser.

Speech

I. PUBLIC SPEAKING AND RHETORIC

201. PUBLIC SPEAKING. Either term. Credit three hours. Not open to students who have taken Speech and Drama 103. Open to others who have satisfied the introductory English requirements of their respective colleges. M W F 8, 9, 10, 11, 12; T Th S 9, 10, 11. Messrs. WILSON, BAKKE, and Staff.

Evening examinations will be given on Tuesday, November 3, and Tuesday, March 16.

Designed to help the student communicate his ideas and convictions effectively in oral dis-

course. 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.

The services of the Speech Clinic are available to those students who need remedial exercises. Students whose native language is not English must obtain special clearance from the Department before registering.

205. DISCUSSION. Either term. Credit four hours. Not open to freshmen. M W F 10. Mr. 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 investigating, analyzing, and presenting problems of fact, value, and policy.

301. PERSUASION AND ARGUMENT—I. Either term. Credit four hours. Open to upperclassmen and to underclassmen who have taken Speech and Drama 103, 105, or 201. M W F 9. Mr. BAKKE.

Study of the principles of reasoning and motivation in persuasive oral discourse. Topics to be considered: investigation and analysis of issues, types and tests of evidence and reasoning as applied in discussion of public questions, briefing, methods of proof and refutation.

Practice in analysis of supporting materials and in construction and delivery of speeches; study of examples; conferences.

302. PERSUASION AND ARGUMENT—II. Spring term. Credit four hours. Prerequisite, Speech and Drama 301. M W F 9. Mr. ———.

Advanced study of persuasive oral discourse with special attention to elementary psychological principles of motivation and to audience adaptation in situations involving confrontation. Practice in speech composition, in forensic and parliamentary debate, and in cross-examination.

401. FORMS OF PUBLIC ADDRESS. Fall term. Credit four hours. For upperclassmen and graduates. T Th 11-12:15. Mr. WILSON. Study of style in various forms of public address: legislative, legal, ceremonial, campaign, sermon. Speeches illustrating the forms of address will be drawn from the works of Burke, Webster, Lincoln, F. D. Roosevelt,

Churchill, and others. Some practice in speech composition, oral and written.

402. PSYCHOLOGY OF PERSUASIVE DISCOURSE. Spring term. Credit four hours. For upperclassmen and graduates. T Th 11-12:15. Mr. ———.

An examination of the available means of persuasion in various settings. Lectures, readings, and research reports on problems and theories of persuasion. Topics considered will include the persuader's creative and analytical processes, audience perception and response, the modes of appeal, the ethics of persuasion. Critical analysis of contemporary persuasion.

[411. **PUBLIC ADDRESS IN HISTORICAL PERSPECTIVE: 1350-1750.** Not offered in 1964-1965.]

[412. **PUBLIC ADDRESS IN HISTORICAL PERSPECTIVE: 1750-1860.** Not offered in 1964-1965.]

413. PUBLIC ADDRESS IN HISTORICAL PERSPECTIVE: 1860-1963. Fall term. Credit four hours. Open to upperclassmen who have taken one of the following: Speech and Drama 103, 105, 201 or equivalent, or six hours of English or American history. M W F 12. Mr. WILSON.

Critical study of the settings, content, and persuasive influence of significant British and American addresses. Special attention will be given to speeches treating post-Civil War reconstruction in America; imperialism, economic and social reform, totalitarianism, and world organization. Addresses by Disraeli, Gladstone, Theodore Roosevelt, Woodrow Wilson, Lloyd George, Franklin Roosevelt, Hitler, Mussolini, and Khrushchev will be among those studied. Lectures, readings, research papers.

501-502. SEMINAR IN RHETORICAL THEORY. Throughout the year. Credit four hours a term. M 2-4:30. Messrs. WILSON and BAKKE.

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.** Not offered in 1964-1965.]

620. THESES AND SPECIAL PROBLEMS IN RHETORIC AND PUBLIC ADDRESS. Either term. Credit and hours to be arranged. Messrs. WILSON and BAKKE.

Open to graduate candidates working on theses and to other graduates prepared for independent study of special topics in rhetoric and public address.

The Department calls attention to three prizes in public speaking, competition for which will be open in the spring term: The Woodford Prize for seniors; the Class of 1894 Memorial Prize in Debate for juniors and seniors; the Class of 1886 Memorial Prize in Public Speaking for sophomores and juniors.

II. SPEECH BEHAVIOR AND PATHOLOGY

233. ENGLISH PHONETICS. Spring term. Credit three hours. M W F 9. Mr. NUTTALL.

A study of the physiological and acoustic principles of speech sound classification using the International Phonetic Alphabet. Application of these principles to the identification, production, and general analysis of American English as a system of oral communication. Students planning to take upper-class work in speech behavior and pathology should elect this course as early as possible.

[234. **SURVEY OF SPEECH DISORDERS.** Not offered in 1964-1965.]

[341. **STRUCTURE AND FUNCTION OF THE SPEECH MECHANISM.** Not offered in 1964-1965.]

345. SPEECH BEHAVIOR. Fall term. Credit four hours. M W F 11. Mr. NUTTALL.

Designed to afford a comprehensive and integrated view of speech as a human behavior. A study of the intrapersonal and interpersonal purposes of speech and the capacity and limitations of speech behavior in serving these purposes.

[351. **ORGANIC SPEECH DISORDERS.** Not offered in 1964-1965.]

355. FUNCTIONAL SPEECH DISORDERS. Spring term. Credit four hours. Prerequisite, Speech and Drama 345 or consent of the instructor. M W F 11. Mr. NUTTALL.

Consideration of abnormal speech behaviors with special attention given to disorders of articulation and the voice, and to stuttering. Causes of the disorders will be explored and implications for therapy discussed.

[358. **DISORDERS OF SPEECH RECEPTION.** Not offered in 1964-1965.]

[461-462. **CLINICAL PROCEDURES IN SPEECH PATHOLOGY.** Not offered in 1964-1965.]

565. SEMINAR IN SPEECH PATHOLOGY. Spring term. Credit four hours. F 3-5:30. Mr. NUTTALL.

Seminar topics selected from among aphasia and related language disorders, symptom formation in stuttering, voice disorders, clinical audiology.

660. THESES AND SPECIAL PROBLEMS IN SPEECH BEHAVIOR. Either term. Credit and hours arranged. Messrs. NUTTALL and ———.

Open to graduate candidates working on theses and to other graduates prepared for independent study of special topics in speech behavior.

665-666. SEMINAR IN SPEECH BEHAVIOR. Throughout the year. Credit four hours a term. T 2-4:30. First term, Mr. NUTTALL. Second term, Mr. ———.

Advanced study of selected topics in speech behavior.

***SPEECH CLINIC.** The Speech Clinic is one of the student services of the University. It serves all regularly enrolled students on a non-credit basis. Those wishing assistance in connection with speech problems may consult the Department Chairman.*

Drama

[271. **INTRODUCTION TO THEATRE ART.** Not offered in 1964-1965.]

273. THE PUBLIC ARTS: FILM, RADIO, AND TELEVISION. Spring term. Credit three hours. M W F 12. Mr. ROBERTSON.

A study of the three principal theatre-related arts, and of the means they employ to entertain, to instruct, and to influence. Special attention to aesthetic and critical aspects of each, with emphasis on the theatrical elements common to all three. Varied forms of dramatic realism in the several media; symbols in language and action; patterns of structure and style.

281. ORAL INTERPRETATION OF LITERATURE. Fall term. Credit three hours. Not open to freshmen. M W F 9. Mr. ROBERTSON.

An introductory course intended to help the student communicate accurately and expressively in reading aloud. Study of principles and criteria of good reading; analysis and delivery of selected materials from prose and poetry; conferences; drill.

283. DRAMATIC INTERPRETATION. Spring term. Credit three hours. Not open to students who have taken Speech and Drama 104. T Th 11. Laboratory, M 2-4. Mr. ALBRIGHT.

An introductory course in acting; analysis and performance of varied types of dramatic prose and poetry; study of speech and action as adapted to the stage with special attention to problems of characterization; reports, individual exercises, and group rehearsal.

285. PLAY PRODUCTION. Fall term. Credit three hours. Not open to freshmen. T Th 10. Laboratory, M 2-4. Mr. McCALMON.

Principles and methods of dramatic production, with special attention to directorial controls. Fundamentals of theatrical mounting; survey of practical phases of production. Required of majors in drama; recommended to others as basic to all 300 and 400 courses in dramatic production.

373. A SURVEY OF THEATRICAL THEORY. Fall term. Credit four hours. T Th 11 and an hour to be arranged. Mr. ALBRIGHT.

Contemporary approaches to dramatic production, considered in historical perspective. Traditional problems in aesthetics and criticism, from the point of view of the non-specialist student. Special attention to such developments as the New Stagecraft, the epic theatre of Brecht, and the theatre of the absurd.

375. THE MOTION PICTURE: A SURVEY. Fall term. Credit four hours. T Th 11. Laboratory, T 2-4:30. Mr. STANTON.

An introduction to the history and art of the film: its characteristic problems, devices, and development. Representative motion pictures, from *The Great Train Robbery* and Griffith's *The Birth of a Nation* or *Intolerance* to contemporary films of significance, will be studied. Students are urged to attend the film programs of the University Theatre.

376. THE MOTION PICTURE: FILMS OF FACT. Spring term. Credit four hours. T Th 11. Laboratory, T 2-4:30. Mr. STANTON.

An examination of the nonfiction film: the documentary and its derived types including propaganda, informational, and classroom films. Attention will be given to the artistic and functional values of motion picture essays, both American and foreign. Lectures, discussions, and reports; examples of various types of films will be shown and analyzed.

381. STAGECRAFT. Fall term. Credit four hours. No prerequisite but previous study of acting or play production recommended. M W 12. Laboratory, T 2-4:30. Mr. CARLSON.

The theory and practice of stage production and design; theatre structure and equipment, problems and practice in scene construction

and painting, elements of lighting. Lectures, demonstrations, research reports.

382. STAGE LIGHTING AND DESIGN. Spring term. Credit four hours. Prerequisite, Speech and Drama 381 or consent of instructor. M W 12. Laboratory, T 2-4:30. Mr. CARLSON.

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. Open by consent of the instructors to upperclassmen who have taken or who are taking Speech and Drama 104, 283, or 285. Two terms normally required for majors in drama. Hours to be arranged. Messrs. CARLSON and McCALMON and the Staff of the University Theatre.

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. M F 2-4. Mr. McCALMON.

Readings, reports, and assignments in the direction and production of plays in Studio program.

[**386. ADVANCED ACTING.** Not offered in 1964-1965.]

388. PLAYWRITING. Fall term. Credit four hours. Previous study in play production recommended. F 2-4:30. Mr. McCALMON.

A consideration of the art and craft of writing for the theatre; practice through the composition and testing of one-act plays.

391. HISTORY OF THE THEATRE. Fall term. Credit four hours. M W F 10. Mr. STANTON.

The development of the theatre, with special attention to the period theatres and theatrical styles which influence modern stage presentation.

392. AMERICAN DRAMA AND THEATRE. Spring term. Credit four hours. M W F 10. Mr. ROBERTSON.

A study of the American theatre and of representative American plays from the colonial period to the present, with emphasis on the drama as an experience of the national life and culture.

[**491. SEMINAR IN THEATRE HISTORY.** Not offered in 1964-1965.]

495. THEATRE AESTHETICS. Fall term. Credit four hours. Prerequisites, Speech and Drama 285 plus two 300-level or 400-level courses in drama. W 2-4:30. Mr. ALBRIGHT.

The chief theories of dramatic production in relation to aesthetic principles.

497. THEATRE CRITICISM. Spring term. Credit four hours. Prerequisites, Speech and Drama 285 plus two 300 or 400 courses in drama. Hours to be arranged. Mr. STANTON. Examination of contemporary critical theory, related primarily to plays in production.

[595. **SEMINAR IN THEATRE AESTHETICS.** Not offered in 1964-1965.]

[597. **SEMINAR IN THEATRE CRITICISM.** Not offered in 1964-1965.]

690. THESES AND SPECIAL PROBLEMS IN DRAMA AND THE THEATRE. Either term. Credit and hours to be arranged. Messrs. ALBRIGHT, CARLSON, McCALMON.

Open to graduate candidates working on theses and to other graduates prepared for independent study of special topics in drama and theatre.

Three prizes are offered under the auspices of the Department: the Heermans Prize for One-Act Plays on an American Theme (open

to undergraduates), the Cornell Dramatic Club Prize for One-Act Plays (open to graduates and undergraduates with no restriction as to theme), and the Cornell Dramatic Club First President's Prize for significant contributions to the theatre program.

The Drummond Awards were established in honor of the late Professor A. M. Drummond, to acknowledge, each year, outstanding achievements by undergraduate members of the Cornell Dramatic Club and other undergraduate participants in the University Theatre program.

Honors

328-329. INDEPENDENT STUDY: HONORS. Throughout the year. Credit four hours a term. Prerequisite, acceptance as a candidate for Honors. Hours to be arranged. Members of the Department.

428. HONORS SEMINAR. Spring term. Credit four hours. Prerequisite, senior standing as a candidate for Honors. Hours to be arranged. Members of the Department.

429. HONORS RESEARCH. Fall term. Credit four hours. Prerequisite, senior standing as a candidate for Honors.

ZOOLOGY

Mr. ———, *Chairman*; Messrs. H. B. ADELMANN, J. M. ANDERSON, L. C. COLE, P. W. GILBERT, S. L. LEONARD, W. N. MCFARLAND, H. F. PARKS, R. B. REEVES, J. R. VALLENTYNE, W. A. WIMSATT.

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

Prerequisites for admission to the major program include (a) Zoology 101-102, or 103-104, with a grade of at least 75 for each term; (b) Chemistry 107-108 or the equivalent; (c) Physics 101-102 or (preferably) 207-208.

The requirements for completion of the major program are as follows: (a) Zoology 321-322; (b) Plant Breeding (Agr.) 301 (Genetics); (c) Zoology 441-443 or 541-543; (d) a minimum of twelve hours to be selected from the following courses: Zoology 315-316; 325; 326; 360 or 561-562; 365, 426; 441-443 or 541-543; 524; 570; 391-392-491-492; (four hours only); Conservation (Agr.) 207-208 or Entomology (Agr.) 322 or Entomology (Agr.) 351; (e) organic chemistry (Chemistry 353-355 or the equivalent; maximum of six hours applicable). Further, it is strongly recommended that all students majoring in zoology complete an additional six hours selected from courses in botany, mathematics, or statistics (ILR 210, 311).

Honors candidates must take at least eight hours of advanced and intensive Honors work (Zoology 391-392-491-492) under the direction of a staff member; of these eight hours, not more than four may be counted toward the completion of the normal course requirements for a major in zoology. During their final term, Honors candidates will be required either to submit a creditable thesis or to pass a comprehensive examination. Prerequisites for admission to candidacy for Honors are a cumulative average grade of 80 in all subjects and permission of the Honors adviser. Students who can meet the quality prerequisite and are interested in Honors

candidacy should confer with the Honors adviser, Professor Leonard, early in the junior year, with a view to arranging admission and formulating plans for completion of the Honors requirements. If possible, Honors candidates should register for one of the Honors courses (Research in Zoology) not later than the second term of the junior year.

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

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

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

101-102. INTRODUCTORY ZOOLOGY.

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

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

103-104. GENERAL ZOOLOGY.

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

A survey of the various branches of the zoological sciences to serve as a background for advanced work in the study of animals. The principles of zoology will be illustrated by the study of representative animals with emphasis on those of economic importance to

agriculture and to man. Emphasis will be placed on the biology of the vertebrates including the structural, functional, developmental, and genetic aspects.

201. HUMAN STRUCTURE AND DEVELOPMENT.

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

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

Zoology 201 is one of a group of courses dealing with the general topic of the nature of man from the perspectives of the biological and behavioral sciences. The other courses in the group are Child Development (H.E.) 115 and Anthropology 312. The courses may be taken singly or in any order.

242. HUMAN PHYSIOLOGY.

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

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

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

315. INVERTEBRATE ZOOLOGY. Fall term. Credit four hours. Prerequisites, Zoology 101-102, or 103-104, or equivalent, and permission of instructor. Lecture, W 11. Laboratory, W F 2-4:20. Mr. ANDERSON and Assistant.

Lectures on selected topics in the development, structure, function, and interrelations of invertebrate animals, with particular attention to phylogenetic aspects and to interesting groups of enigmatic position. Intensive laboratory work on representative forms, utilizing living or fresh specimens wherever possible; a limited number of field trips scheduled during early fall. A significant amount of independent work is required of each student, including a term paper on library or laboratory research.

[**316. INVERTEBRATE ZOOLOGY.** Spring term. Credit four hours. Mr. ANDERSON. Not offered in 1964-1965.]

321-322. COMPARATIVE ANATOMY OF VERTEBRATES. Throughout the year. Credit three hours a term. Prerequisite, Zoology 101-102, or 103-104, or the equivalent. In these prerequisite courses a student must have earned a grade of at least 75. Zoology 321 prerequisite to Zoology 322. Lectures, M 8 or 9. Laboratory, M F or T Th 2-4:30; W F or T Th 8-10:30; or W 2-4:30 and S 8-10:30. Mr. GILBERT and Assistants.

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

325. HISTOLOGY: THE BIOLOGY AND DEVELOPMENT OF THE TISSUES. Fall term. Credit four hours. Prerequisites, Zoology 101-102, or 103-104, and 321-322. Lectures, T Th 11. Laboratory, T Th 8-10:30 or 2-4:30. Mr. WIMSATT and Assistants.

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

326. VERTEBRATE EMBRYOLOGY. Spring term. Credit five hours. Prerequisites, Zoology

101-102, or 103-104, and 321-322. Zoology 325 is also normally a prerequisite, and permission to omit it will be granted only in exceptional cases. Lectures, T Th 11, S 10. Laboratory, T Th 8-10:30 or 2-4:30. Mr. ——— and Assistants.

An introduction to general vertebrate embryology designed to provide a basis for the appreciation of biological problems. The material is treated comparatively with particular emphasis on the development of the amphibian, the bird, and the mammal. A few invertebrate forms are used where desirable for illustration.

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

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

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

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

381-382. RESEARCH IN ZOOLOGY. Informal, junior year. Credit and hours to be arranged. Problems may be undertaken in any phase of zoology, but the consent of the instructor concerned is a prerequisite.

391-392. RESEARCH IN ZOOLOGY. Honors, junior year. Either term. Credit and hours to be arranged. Prerequisite, admission to candidacy for Honors in zoology. Individual advanced work under the guidance of an Honors adviser, designed to increase the knowledge and experience of the candidate with the subject matter and the methods of research in some important phase of zoology.

[**403-404. SPECIAL TOPICS IN ZOOLOGY.** Throughout the year. Credit four hours a term. Open to graduate students and advanced undergraduates. Permission of instruc-

tor required. Hours as arranged. Mr. ———. Not offered in 1964–1965.]

426. SPECIAL HISTOLOGY: THE BIOLOGY OF THE ORGANS. Spring term. Credit four hours. Prerequisite, Zoology 325. Enrollment limited to 20 students. Lectures, W F 9. Laboratory, W F 2–4:30. Mr. WIMSATT and Assistants.

A continuation of Zoology 325. Zoology 325 and 426 together give the fundamental facts of the microscopic structure and function of the body. Opportunity to gain knowledge of technique in the fixing, embedding, and sectioning of selected organs is also offered.

441. GENERAL AND COMPARATIVE PHYSIOLOGY, LECTURES. Fall term. Credit three hours. Prerequisites, one year of biology or zoology and college courses in chemistry. Organic chemistry desirable. Lectures, M W F 10. Mr. McFARLAND.

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

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

481–482. RESEARCH IN ZOOLOGY. Informal, senior year. See description under Zoology 381–382.

491–492. RESEARCH IN ZOOLOGY. Honors, senior year. See description under Zoology 391–392.

521–522. HUMAN ANATOMY. Hours and credit to be arranged. Open to a limited number of graduate students only. Permission of instructor required for registration. Mr. PARKS.

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

524. COMPARATIVE NEUROLOGY. Spring term. Credit four hours. Primarily for graduate students but open to qualified undergraduates. Permission of instructor required. Lectures, T Th 12. Laboratory, M or W 2–4:30. Mr. PARKS and Assistant.

A comparative study of the vertebrate nervous system with emphasis upon the primate. Stud-

ies include dissections of the brain and the identification of nuclei and tracts in sections of the brain and spinal cord. Functional aspects of anatomical relations are stressed.

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

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

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

An introduction to basic problems of cellular function including structural and functional organization of cells, role of nucleic acids, permeability and active transport, contractility, excitability, metabolism, growth and cellular interactions.

543. CELLULAR PHYSIOLOGY LABORATORY. Fall term. Credit two hours. Enrollment is limited. Laboratory, W or Th 1:40–4:30. Mr. REEVES and Assistant.

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

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

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

[556. SPECIAL TOPICS IN COMPARATIVE PHYSIOLOGY. Spring term. Credit four hours. Prerequisite, consent of instructor. For advanced students in biological sciences. Enrollment limited. Th 1:40–4:30. Mr. McFARLAND. Not offered in 1964–1965.]

[561–562. ECOLOGY AND PHYSIOLOGY OF THE INVERTEBRATES. Throughout the year. Credit three hours a term. Prerequisites, one year of general biology or introductory zoology. Organic chemistry and some college mathematics are desirable. Lectures, M W 11.

Laboratory, W 2-4:30. Mr. COLE. Not offered in 1964-1965.]

[570. **BIOGEOCHEMISTRY.** Spring term. Credit four hours. Prerequisites, one year of college work in a biological science, one course in geology, organic chemistry, and consent of the instructor. Ecology and biochemistry are desirable. Enrollment is limited. Lectures, T Th 9. Seminar, S 9. Laboratory, M or T

2-4:30. Mr. VALLENTYNE and Assistant. Not offered in 1964-1965.]

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

Reports and discussion of current research in zoology.

INTERDEPARTMENTAL COURSES

301-302. **BRAIN MECHANISMS AND MODELS.** Throughout the year. Credit four hours a term. Prerequisites, calculus, graduate or advanced undergraduate standing, and consent of instructor. Knowledge of modern algebra and probability theory is desirable. Lecture, W 3, with additional hours to be arranged. Mr. ROSENBLATT, with assistance of Mr. BLOCK and guest lecturers.

Fall semester: review of fundamentals of neurophysiology, psychological and physiological criteria for brain models, computers, and digital automata in relation to brain mechanisms, review of representative models, theory of elementary perceptrons. The Mark I perceptron will be available for laboratory work. Spring semester: theory of multi-layer and cross-coupled perceptrons; recognition of temporal patterns; problems of figure organization, cognitive sets, sequential programs, and other problems of advanced models.

404. **COMPUTER METHODS IN BEHAVIORAL SCIENCES.** Spring term. Credit four hours. Prerequisite, an intermediate statistics course (may be taken concurrently). Lectures, T Th 9. Laboratory W 4-6. Mr. RUDAN.

Importance of digital computers in behavioral research. Issues that arise in design of research

instruments. The use of unit record equipment in data analysis and reduction. Programming with the FORTRAN language. Outline of programs available for analysis and reduction of data. Information on the theory and use of such programs.

Latin American Studies

The attention of students interested in Latin American Studies is called to the variety of courses in this field offered in different departments: Agricultural Economics (Agr.) 665; Anthropology 332, 351, 541; Economics 325 and 565, History 319-320, 487, 488; Industrial and Labor Relations (ILR) 533; Rural Sociology (Agr.) 414; Spanish 311-312.

SEMINAR: LATIN AMERICAN STUDIES 602. Spring term. Credit four hours. Hours to be arranged. Mr. DAVIS.

A required course for all graduate students minoring in Latin American studies. Students will work on projects in their field of interest under the direction of a faculty member. Various faculty specialists in Latin American affairs will participate in the seminar.

COURSES IN OTHER DIVISIONS

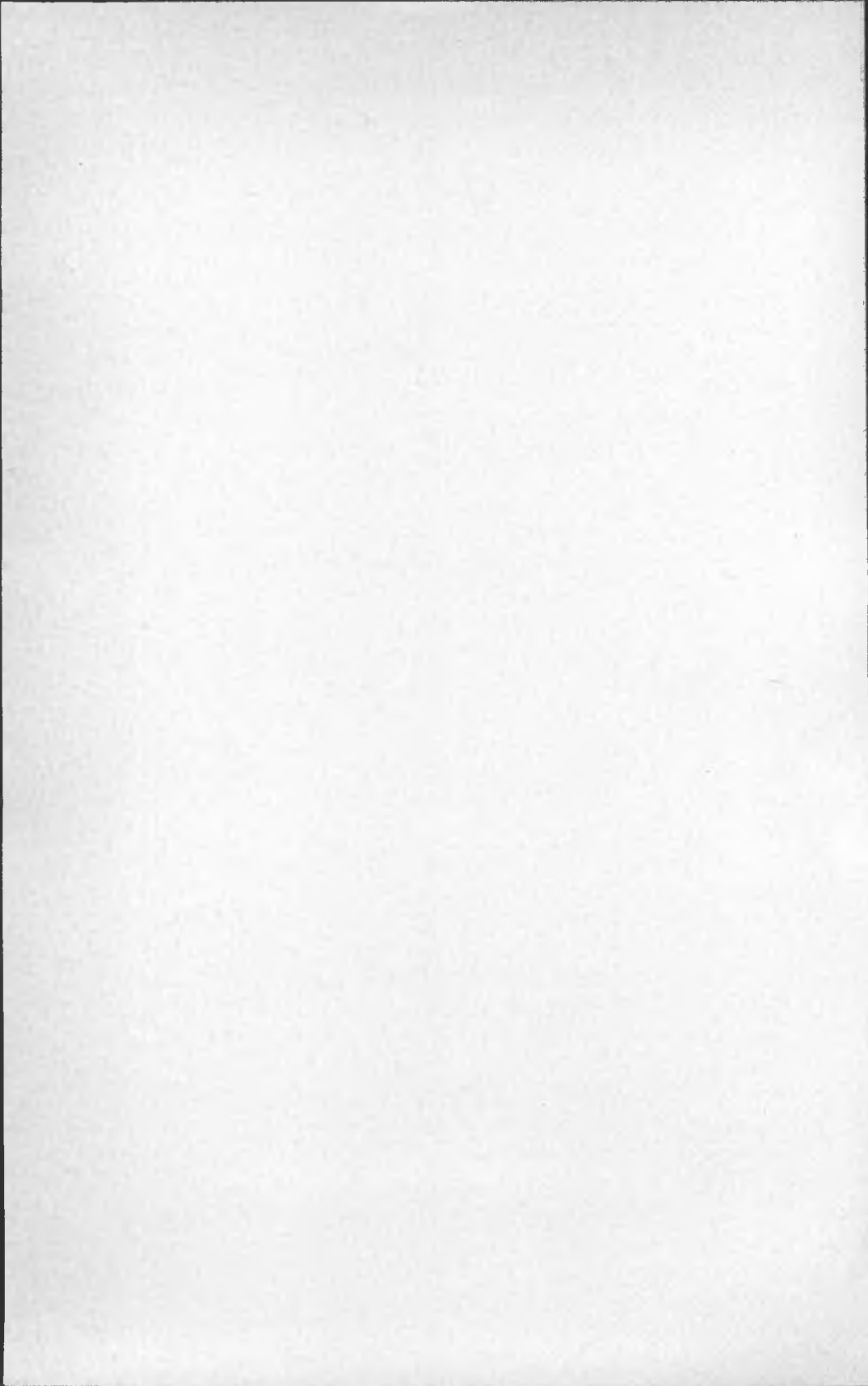
Courses of interest to students in the College of Arts and Sciences are offered by the Departments of Military Science, Air Science, Naval Science, and Physical Education.

The offerings in military training are described in the *Announcement of Military Training*.

The courses in physical education are described in publications which the Department of Physical Education makes available to students at registration.

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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 *General Information*; 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), New York State College of Agriculture (Two-Year Course), College of Architecture, College of Arts and Sciences, School of Education, Department of Asian Studies, New York State College of Home Economics, School of Hotel Administration, New York State School of Industrial and Labor Relations, Military Training, Summer School.

Announcements of the College of Engineering may also be obtained. Please specify if the information is for a prospective student.

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

Requests for these publications may be addressed to

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