Swarthmore

College Bulletin 1980-81

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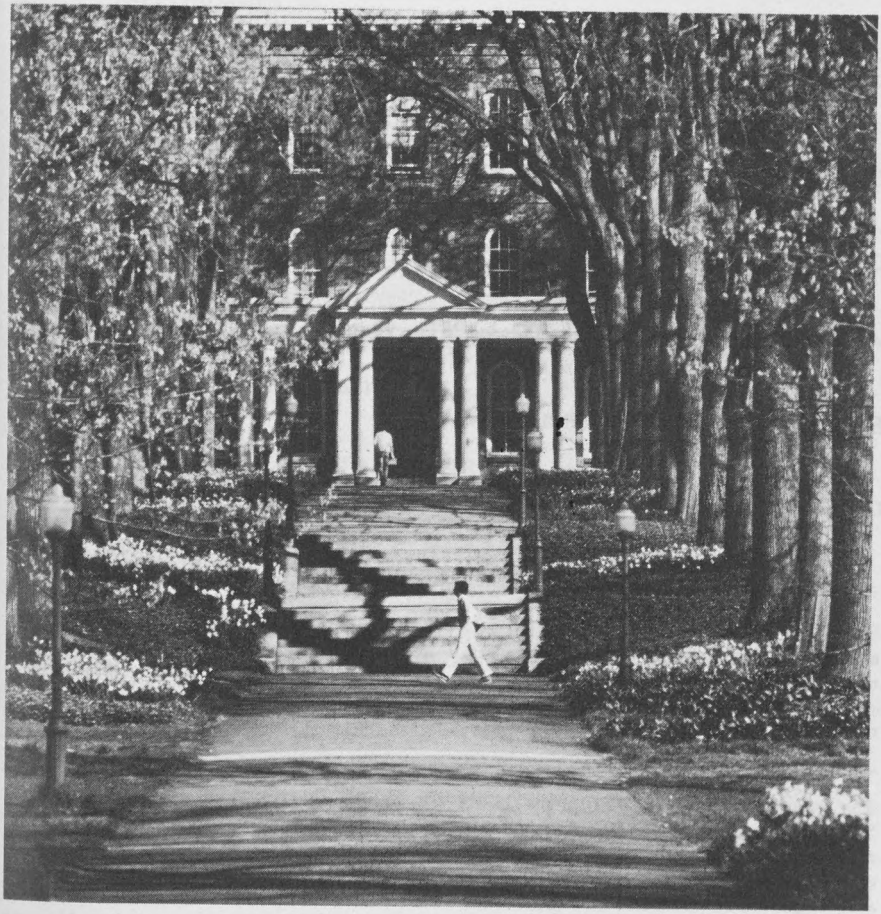

Directions for Correspondence

SWARTHMORE COLLEGE, SWARTHMORE, PA 19081

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College Calendar

1980 Fall Semester

September 3-7	Freshman placement days
September 5	Meeting of Honors candidates
September 6	Registration
September 8	Classes and Seminars begin
September 26-27	Meeting of the Board of Managers
November 21	Thanksgiving vacation begins, 6:00 p.m.
December 1	Thanksgiving vacation ends, 8:30 a.m.
December 5-6	Annual meeting of the Board of Managers
December 5	Enrollment for spring semester
December 8-12	Reading period (at option of instructor)
December 12	Classes end
December 6	Meeting of Honors candidates
December 15	Midyear examinations begin
December 19	Seminars end
December 20	Midyear examinations end

1981 Spring Semester

January 18	Classes and Seminars begin
February 27-28	Meeting of the Board of Managers
March 6	Spring vacation begins, 6:00 p.m.
March 16	Spring vacation ends, 8:30 a.m.
April 27 - May 1	Reading period (at option of instructor)
May 1	Classes and Seminars end
May 1-2	Meeting of the Board of Managers
May 4	Enrollment for fall semester
May 7	Written Honors examinations begin
May 7	Course examinations begin
May 16	Course examinations end
May 18	Written Honors examinations end
May 19-20	Senior comprehensive examinations
May 21-23	Oral Honors examinations
May 29-30	Meeting of the Board of Managers
May 31	Baccalaureate Day
June 1	Commencement Day
June 6	Alumni Day

College Calendar

(Tentative)

1981 Fall Semester

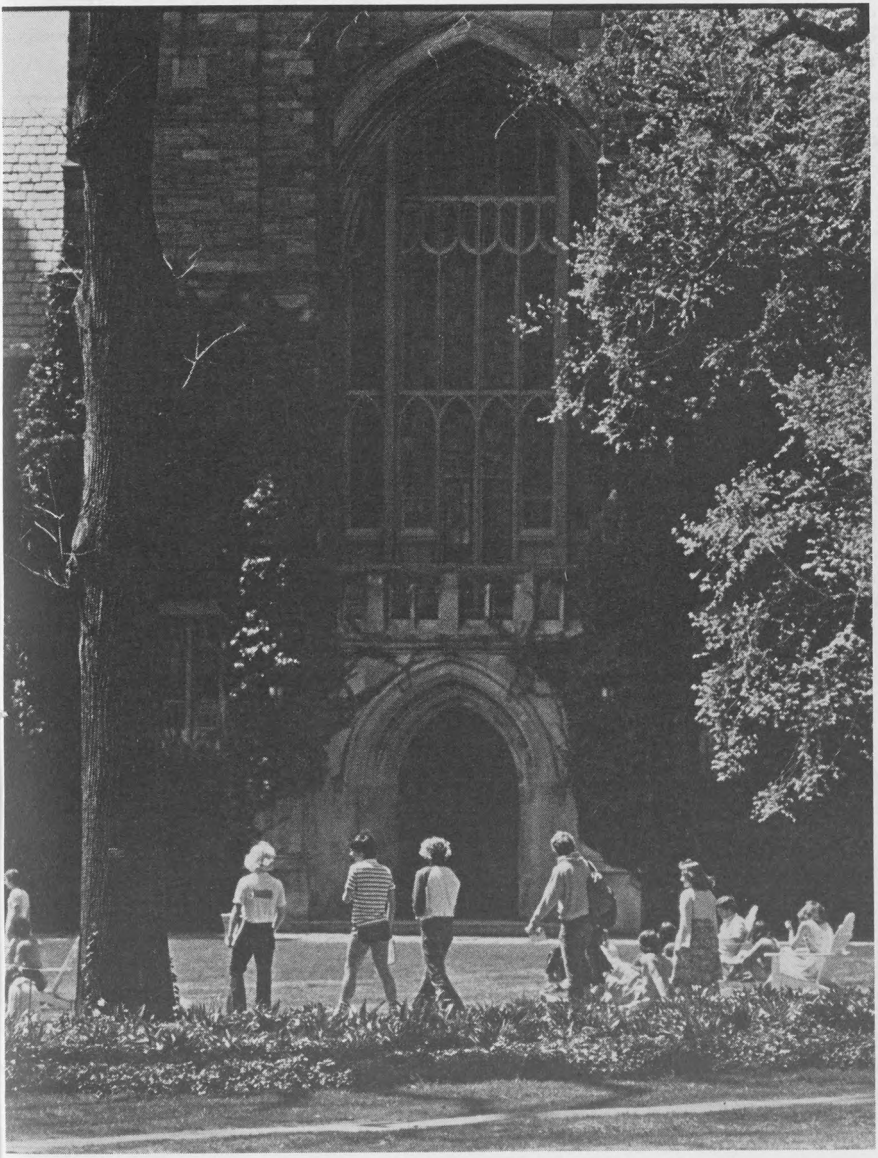
September 2-6	Freshman placement days
September 4	Meeting of Honors candidates
September 5	Registration
September 8	Classes and Seminars begin
September 25-26	Meeting of the Board of Managers
November 20	Thanksgiving vacation begins, 6:00 p.m.
November 30	Thanksgiving vacation ends, 8:30 a.m.
December 4-5	Annual meeting of the Board of Managers
December 4	Enrollment for spring semester
December 7-11	Reading period (at option of instructor)
December 11	Classes end
December 5	Meeting of Honors candidates
December 14	Midyear examinations begin
December 19	Seminars end
December 19	Midyear examinations end

1982 Spring Semester

January 18	Classes and Seminars begin
February 26-27	Meeting of the Board of Managers
March 5	Spring vacation begins, 6:00 p.m.
March 15	Spring vacation ends, 8:30 a.m.
April 26-30	Reading period (at option of instructor)
April 30	Classes and Seminars end
April 30 - May 1	Meeting of the Board of Managers
May 3	Enrollment for fall semester
May 6	Written Honors examinations begin
May 6	Course examinations begin
May 15	Course examinations end
May 17	Written Honors examinations end
May 18-19	Senior comprehensive examinations
May 20-22	Oral Honors examinations
May 28-29	Meeting of the Board of Managers
May 30	Baccalaureate Day
May 31	Commencement Day
June 5	Alumni Day

Introduction to Swarthmore College

Educational Resources



Introduction to Swarthmore College

Swarthmore College, founded in 1864 by members of the Religious Society of Friends as a co-educational institution, occupies a campus of more than 300 acres of rolling wooded land in and adjacent to the borough of Swarthmore in Delaware County, Pennsylvania. It is a small college by deliberate policy. Its present enrollment is about 1290 men and women students. The borough of Swarthmore is a residential suburb within half an hour's commuting distance of Philadelphia. College students are able to enjoy both the advantages of a semi-rural setting and the opportunities offered by Philadelphia. The College's location also makes possible cooperation with three nearby institutions, Bryn Mawr and Haverford Colleges and the University of Pennsylvania.

OBJECTIVES AND PURPOSES

In accordance with the College's Quaker tradition, Swarthmore students are expected to prepare themselves for full, balanced lives as individuals and as responsible citizens through exacting intellectual study supplemented by a varied program of sports and other extra-curricular activities.

The purpose of Swarthmore College is to make its students more valuable human beings and more useful members of society. While it shares this purpose with other educational institutions, each school, college, and university seeks to realize that purpose in its own way. Each must select those tasks it can do best. By such selection it contributes to the diversity and richness of educational opportunity which is part of the American heritage.

VARIETIES OF EDUCATIONAL EXPERIENCE

Education is largely an individual matter, for no two students are exactly alike. Some need detailed help, while others profit from considerable freedom. The Course and External Examination (Honors) Programs are designed to give recognition to this fact. They provide alternative systems of instruction for students during their last two years. Both seek to evoke the maximum effort and development from each student, the choice of method being determined by individual preference and capacity. The Honors Program, in which Swarthmore pioneered, provides an enriching and exciting intellectual experience. It has as its main ingredients close association with faculty members, often in small seminars, concentrated work in various fields of study, and maximum latitude for the development of individual responsibility. Within the Course Program, options for independent study and interdisciplinary work offer opportunities for exploration and development over a wide range of individual goals. These opportunities typically include considerable flexibility of program choices from semester to semester, so that academic planning may be responsive to the emerging needs of students.

THE RELIGIOUS TRADITION

Swarthmore College was founded by members of the Religious Society of Friends, and it seeks to illuminate the life of its students with the spiritual principles of that Society. Although it has been non-sectarian in control since the beginning of the present century, and although the children of Friends compose a minority of the student body, the College seeks to preserve the religious traditions out of which it grew.

The essence of Quakerism is the individual's responsibility for seeking truth and for applying whatever truth he believes he has

found. As a way of life, it emphasizes hard work, simple living, and generous giving; personal integrity, social justice, and the peaceful settlement of disputes. The College does not seek to impose on its students this Quaker view of life, or any other specific set of convictions about the nature of things and the duty of man. It does, however, encourage ethical and religious concern about such questions, and continuing examination of any view which may be held regarding them.

TRADITION AND CHANGE

A college draws strength from tradition, and energy from the necessity of change. Its purposes and policies must respond to new conditions and new demands. By being open to change, Swarthmore tries to provide for its students, by means appropriate to the times, the standard of excellence it has sought to maintain from its founding.

Educational Resources

The primary educational resources of any college are the quality of its faculty and the spirit of the institution. Financial as well as physical resources play an important supportive role.

THE ENDOWMENT

The educational resources at Swarthmore College have been provided by gifts and bequests from many alumni, foundations, corporations, parents and friends. In addition to unrestricted gifts for the operating budget, these donors have contributed funds for buildings, equipment, collections of art and literature, and permanently endowed professorships, scholarships, awards, book funds and lectureships. Their gifts to Swarthmore have not only provided the physical plant, but also have created an endowment fund of more than $90,000,000 at market value on June 30, 1980. Income from these funds during the academic year 1978-79 contributed approximately $2,446 to meet the total expense of educating each student, and thus accounted for 22% of the College's educational and general income.

The College's ability to continue to offer a high quality of education at a reasonable level of tuition depends on continuing voluntary support. Swarthmore seeks additional gifts and bequests for its current operations, it permanent endowment, and its capital development programs to maintain and strengthen its resources. The Vice President in charge of development will be pleased to provide information about various forms of gifts: bequests, outright gifts of cash or securities, real estate or other property, and deferred gifts through charitable remainder trusts and life income contracts in which the donor reserves the right to the annual income during his or her lifetime.

PHYSICAL FACILITIES

Laboratories, well equipped for undergraduate instruction and in some cases for research, exist in physics, chemistry, zoology, botany, psychology, astronomy, and in civil, mechanical and electrical engineering. The Sproul Observatory, with its 24-inch visual refracting telescope, is the center of much fundamental research in multiple star systems. The Edward Martin Biological Laboratory provides facilities for work in zoology, botany, and pre-medical studies. The Pierre S. du Pont Science Building provides accommodations for chemistry, mathematics, and physics. Beardsley and Hicks Halls contain the engineering laboratories, including a computer laboratory equipped with a DEC PDP 11/40 system with disc storage and laboratory peripherals. Papazian Hall provides facilities for work in psychology, and for the engineering shops.

The Arts Center contains the Paul M. Pearson Experimental Theatre and studios for various arts and crafts.

The Florence Wilcox Gallery for art exhibitions is located in Commons on the second floor of Parrish Hall.

The Eugene M. and Theresa Lang Music Building, opened in 1973, contains an auditorium seating approximately 500, the Daniel Underhill Music Library, classrooms, practice and rehearsal rooms, and an exhibition area. It is the central facility for the program of the Music Department and for musical activities at the College.

The Computing Center, located in Beardsley Hall, is equipped with an IBM 1130 computer, several IBM 5100 portable computers with APL, and appropriate supporting equipment as well as terminals for either remote job entry or interactive computing in APL with an IBM 370/168 facility. All systems are available to students and faculty for instruction and research.

The Center for Social and Policy Studies in Beardsley Hall is closely related to the Computer Center. It is intended to encourage interacion and a common focus among departments, especially the social and natural sciences, engineering, and mathematics, in empirical work on social and policy issues. It facilitates student and faculty work and supports the concentration in Public Policy through its physical facilities, data archives, program of events and by making available statistical consulting to students and faculty.

The Language Laboratory in Beardsley Hall, made possible by a contribution from the James Foundation of New York, provides stations for 24 students and has the equipment for effective use in language teaching.

The Thomas B. and Jeannette E.L. McCabe Library contains reading rooms, offices and the major portion of the College library collection. Total College library holdings amount to 550,000 volumes. Some 20,000 volumes are added annually. About 2,300 periodicals are received regularly. The general collection is housed in the library building, situated on the front campus. The Science Libraries (Du Pont, Martin and Observatory) house some 48,000 books and journals in chemistry, engineering, mathematics and physics. The Daniel Underhill Music Library contains about 12,000 books and scores, 7,500 recordings, and listening equipment. A small collection of relevant material is housed in the Black Cultural Center. The library is definitely a collection of books and journals for undergraduate use. The demands of reading for Honors, however, make necessary the provision of large quantities of source material not usually found in collections maintained for undergraduates. It is a point of library policy to try to supply, either by purchase or through inter-library loan, the books needed by students or members of the faculty for their individual research.

SPECIAL COLLECTIONS

The library contains certain special collections — the British Americana collection, the Wells Wordsworth and Thomson collections, the Auden collection, the Bathe collection of the history of technology and a collection of the publications of 650 private presses.

A number of special features enrich the academic background of the College. Among these are the following:

The Friends Historical Library, founded in 1871 by Anson Lapham, is one of the outstanding collections in the United States of manuscripts, books, pamphlets, and pictures relating to the history of the Society of Friends. The library is a depository for records of Friends Meetings belonging to Baltimore, Philadelphia, and other Yearly Meetings. More than 3,200 record books, dating from the 1680's until the present, have been deposited. Additional records are available on microfilm. The William Wade Hinshaw Index to Quaker Meeting Records lists material of genealogical interest. Special collections include materials on various subjects of Quaker concern such as abolition, Indian rights, utopian reform, and the history of women's rights. Notable among the other holdings are the Whittier Collection (first editions and manuscripts of John Greenleaf Whittier, the Quaker poet), the Mott manuscripts (over 400 autographed letters of Lucretia Mott, antislavery and women's rights leader), and the Hicks manuscripts (more than 300 letters of Elias Hicks, a prominent Quaker minister). The library's collection of books and pamphlets by and about Friends numbers approximately 30,000 volumes. About 100 Quaker periodicals are currently received. There is also an extensive collection of photographs of meeting-houses and pictures of representative Friends, as well as a number of oil paintings, including two versions of "The Peaceable Kingdom" by Edward Hicks. It is hoped that Friends and others will consider the advantages of giving to this library any books and family papers which may throw light on the history of the Society of Friends.

The Swarthmore College Peace Collection is of special interest to research students seeking the records of the peace movement. The

personal papers of Jane Addams of Hull-House, Chicago, (approximately 10,000 items) formed the original nucleus of the Collection (1930). Over the years other major collections have been added including the papers of Devere Allen, Emily Greene Balch, Julien Cornell, Homer Jack, Lucy Biddle Lewis, A.J. Muste, Lawrence Scott, John Nevin Sayre, William Sollmann, E. Raymond Wilson, and others, as well as the records of the American Peace Society, A Quaker Action Group, Business Executives Move, Fellowship of Reconciliation, Friends Committee on National Legislation, Lake Mohonk Conferences on International Arbitration, National Interreligious Service Board for Conscientious Objectors, National Council for Prevention of War, National Council to Repeal the Draft, SANE, War Resisters League, Women's International League for Peace and Freedom, Women Strike for Peace, World Conference of Religion for Peace, and many others. The Peace Collection serves as the official repository for the archives of many of these organizations, incorporated here in 6,400 document boxes. The Collection includes a library of 6,660 volumes and files of 1,500 peace periodicals published in the United States and abroad over the past 150 years; approximately 306 periodicals in eleven languages are currently received from twenty-three countries. A more nearly complete description of the Collection will be found in the new *Guide to the Swarthmore College Peace Collection*, to be published by the College in the spring of 1981.

The Potter Collection of Recorded Literature, established in 1950 with accumulated income from the William Plumer Potter Public Speaking Fund, includes a wide variety of recorded poetry, drama and prose. Among the 880 titles on disc and tape are contemporary writers reading from and discussing their works; full length versions of Shakespearean plays and other dramatic repertoire; the literature of earlier periods read both in modern English and in the pronunciation of the time; British and American ballads; lyrical verse in musical settings; and recordings of literary programs held at Swarthmore. These materials are used as adjuncts to the study of literature. The collection is housed in the McCabe Library.

The Betty Dougherty Spock Memorial Fund, established through the generosity of friends of the late member of the Class of 1952, provides income for the purchase of dramatic recordings. These are kept with the Potter Collection.

SPECIAL FUNDS AND LECTURESHIPS

The William J. Cooper Foundation provides a varied program of lectures and concerts which enriches the academic work of the College. The Foundation was established by William J. Cooper, a devoted friend of the College, whose wife, Emma McIlvain Cooper, served as a member of the Board of Managers from 1882 to 1923. Mr. Cooper bequeathed to the College the sum of $100,000 and provided that the income should be used "in bringing to the college from time to time eminent citizens of this and other countries who are leaders in statesmanship, education, the arts, sciences, learned professions and business, in order that the faculty, students and the college community may be broadened by a closer acquaintance with matters of world interest." Admission to all programs is without charge.

The Cooper Foundation Committee works with the departments and with student organizations in arranging single lectures and concerts, and also in bringing to the College speakers of note who remain in residence for a long enough period to enter into the life of the community. Some of these speakers have been invited with the understanding that their lectures should be published under the auspices of the Foundation. This arrangement has so far produced eighteen volumes.

The Arthur Hoyt Scott Horticultural Foundation. About three hundred twenty-five acres are contained in the College property, including a large tract of woodland and the valley of Crum Creek. Much of this tract has been developed as a horticultural and botanical collection of

trees, shrubs and herbaceous plants through the provisions of the Arthur Hoyt Scott Horticultural Foundation, established in 1929 by Mrs. Arthur Hoyt Scott and Owen and Margaret Moon as a memorial to Arthur Hoyt Scott of the Class of 1895. The plant collections are designed both to afford examples of the better kinds of trees and shrubs which are hardy in the climate of Eastern Pennsylvania and suitable for planting by the average gardener, and to beautify the campus. All collections are labeled and recorded. There are exceptionally fine displays of hollies, Japanese cherries, flowering crab apples, magnolias and tree peonies, and a great variety of lilacs, rhododendrons, azaleas, and daffodils. Many interested donors have contributed generously to the collections.

The Foundation offers horticultural educational programs to the general public and an extracurricular course in horticulture to Swarthmore students. These workshops, lectures and classes are designed to cover many facets of the science/art called gardening. Special programs have been prepared to acquaint the youth of the area with the significance of plants with classes from local elementary schools coming to the campus to receive instruction in plants and their relationship to people. Tours are conducted throughout the year for college people and interested public groups.

Aiding the Foundation's staff, in all of its efforts are the "Associates of the Scott Horticultural Foundation." This organization provides not only financial support but also assistance in carrying out the myriad operations which make up the Foundation's total program, such as public lectures and bus tours to other gardens. The Associates' newsletter, *Hybrid*, serves to publicize their activities and provides up-to-date information on seasonal gardening topics.

The Boyd and Ruth Barnard Fund for the Advancement of Music at Swarthmore was established in 1964 by two graduates of the College, Mr. and Mrs. Boyd T. Barnard of Rosemont, Pennsylvania. The fund has been augmented by the 50-year class gifts from the classes of 1917 and 1919, and other friends. The income from the fund may be used for any activity that contributes to the advancement of music at the College. It has been used, for example, for concerts on the campus, for the purchase of vocal and orchestral scores and other musical literature, and to provide scholarship for students in the Department of Music who show unusual promise as instrumentalists or vocalists.

The Gene D. Overstreet Memorial Fund, given by friends in memory of Gene D. Overstreet (1924-1965), a member of the Political Science Department, 1957-1964, provides income to bring a visiting expert to the campus to discuss problems of developing or modernizing nations and cultures.

The Benjamin West Lecture, made possible by gifts from members of the class of 1905 and other friends of the College, is given annually on some phase of art. It is the outgrowth of the Benjamin West Society which built up a collection of paintings, drawings, and prints, which are exhibited, as space permits, in the college buildings. The lecture owes its name to the American artist, who was born in a house which stands on the campus and who became president of the Royal Academy.

The Swarthmore Chapter of Sigma Xi lecture series brings eminent scientists to the campus under its auspices throughout the year. Local members present colloquia on their own research.

The Lee Frank Memorial Art Fund, endowed by the family and friends of Lee Frank, Class of 1921, sponsors each year a special event in the Art Department: a visiting lecturer or artist, a scholar or artist in residence, or a special exhibit.

The Marjorie Heilman Visiting Artist Fund was established by M. Grant Heilman, Class of 1941, in memory of Marjorie Heilman to stimulate interest in art, particularly the practice of art, on campus.

II

Admission
Expenses

Financial Aid

Admission

Inquiries concerning admission and applications should be addressed to the Dean of Admissions, Swarthmore College, Swarthmore, Pennsylvania 19081.

GENERAL STATEMENT

In the selection of students, the College seeks those qualities of character, social responsibility, and intellectual capacity which it is primarily concerned to develop. It seeks them, not in isolation, but as essential elements in the whole personality of candidates for admission.

Selection is important and difficult. No simple formula will be effective. The task is to choose those who give promise of distinction in the quality of their personal lives, in service to the community, or in leadership in their chosen fields. Swarthmore College must choose its students on the basis of their individual future worth to society and of their collective realization of the purpose of the College.

It is the policy of the College to have the student body represent not only different parts of the United States but many foreign countries, both public and private secondary schools, and various economic, social, religious, and racial groups. The College is also concerned to include in each class sons and daughters of alumni and of members of the Society of Friends.

Admission to the freshman class is normally based upon the satisfactory completion of a four-year secondary school program. Under some circumstances, students who have virtually completed the normal four-year program in three years will be considered for admission, provided they meet the competition of other candidates in general maturity as well as readiness for a rigorous academic program.

All applicants are selected on the following evidence:

1. Record in secondary school.
2. Recommendations from the school principal, headmaster, or guidance counselor, and from two teachers.
3. Scores in the Scholastic Aptitude Test and in three Achievement Tests of the College Entrance Examination Board.
4. A brief essay (subject specified).
5. Reading and experience, both in school and out.

Applicants must have satisfactory standing in school, in aptitude and achievement tests, and strong intellectual interests. Other factors of interest to the College include strength of character, promise of growth, initiative, seriousness of purpose, distinction in personal and extra-curricular interests, and a sense of social responsibility. The College values the diversity which varied interests and backrounds can bring to the community.

PREPARATION

Swarthmore does not require a set plan of secondary school courses as preparation for its program. The election of specific subjects is left to the student and school advisers. In general, however, preparation should include:

1. Accurate and effective use of the English language in reading, writing, and speaking.
2. Comprehension and application of the principles of mathematics.
3. The strongest possible command of one or two foreign languages. The College encourages students to study at least one language for four years, if possible.
4. Substantial course work in (a) history and social studies, (b) literature, art and music, (c) the sciences. Variations of choice and emphasis are acceptable although some work in each of the three groups is recommended.

Those planning to major in engineering should present work in chemistry, physics, and four years of mathematics including algebra, geometry, and trigonometry.

APPLICATIONS AND EXAMINATIONS

Application to the College may be submitted through one of three plans: Regular Admission, Fall Early Decision, or Winter Early Decision. Applicants follow the same procedures, submit the same supporting materials, and are evaluated by the same criteria under each plan.

The *Regular Admission* plan is designed for those candidates who wish to keep open several different options for their undergraduate education throughout the admissions process. Applications under this plan will be accepted at any time up to the February 1 deadline.

The two *Early Decision* plans are designed for candidates who have thoroughly and thoughtfully investigated Swarthmore and other colleges and found Swarthmore to be an unequivocal first choice. The Winter Early Decision plan differs from the Fall Early Decision plan only in recognizing that some candidates may arrive at a final choice of college later than others. Early Decision candidates under either plan may file regular applications at other colleges with the understanding that these applications will be withdrawn upon admission to Swarthmore; however, one benefit of the Early Decision plans is the reduction of cost, effort, and anxiety inherent in multiple application procedures.

Application under any of the three plans must be accompanied by a non-refundable application fee of $25. Timetables for the three plans are:

Fall Early Decision

Closing date for applications	November 15
Final date for all supporting materials	November 30
Notification of candidate	on or before December 15

Winter Early Decision

Closing date for applications	January 3
Final date for all supporting materials	January 15
Notification of candidate	on or before February 1

Regular Admission

Closing date for applications	February 1
Final date for all supporting materials	February 20
Notification of candidate	on or before April 15
Candidates reply date	May 1

Any Early Decision candidate not accepted through either the Fall or Winter will be reconsidered without prejudice among the Regular Admission candidates.

All applicants for first-year admission must take the Scholastic Aptitude Test and three Achievement Tests given by the College Entrance Examination Board. English Composition is required, and the other two Achievement Tests should be selected from two different fields. Applicants for Engineering must take one Achievement Test in Mathematics.

Application to take these tests should be made directly to the College Entrance Examination Board, Box 592, Princeton, New Jersey 08540. A bulletin of information may be obtained without charge from the Board. Students who wish to be examined in any of the following western states, provinces, and Pacific areas — Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, Wyoming, Alberta, British Columbia, Manitoba, Saskatchewan, Mexico, Australia, and all Pacific Islands including Formosa and Japan — should address their inquiries and send their applications to the College Entrance Examination Board, Box 1025, Berkeley, California 94701. Application should be made to the Board at least a month before the date on which the test will be taken.

No additional tests are required of candidates for scholarships. All applicants who would like to be considered for any of our scholarships should complete their applications at the earliest possible date. Information concerning financial aid will be found on pages 20-30.

THE INTERVIEW

An admissions interview with a representative of the College is a recommended part of the application process. Applicants should take the initiative in arranging for this interview. Those who can reach Swarthmore with no more than a half day's trip are urged to make an appointment to visit the College for this purpose.* Other applicants should request the Office of Admissions to arrange a meeting with an alumni representative in their own area. Interviews with alumni representatives take longer to arrange than interviews on campus. Applicants must make alumni interview arrangements well in advance of the final dates for receipt of supporting materials.

Arrangements for on-campus or alumni interviews can be made by writing the Office of Admissions or calling 215-447-7300.

ADVANCED PLACEMENT

Freshmen may apply for advanced standing or placement in particular courses if they have taken college level courses and the Advanced Placement Tests of the College Entrance Examination Board. Decisions are made by the departments concerned. Every effort is made to place students in the most advanced courses for which they are qualified.

Those freshmen who wish to have courses taken at another college considered for either advanced placement or credit must provide an official transcript from the institution attended as well as written work (papers, examinations), syllabi, and reading lists in order that the course work may be evaluated by the department concerned. Such requests for credit must be made within the freshman year at Swarthmore.

APPLICATIONS FOR TRANSFER

The College welcomes well qualified transfer students. Applicants for transfer must have had a good academic record in the institution attended and must present full credentials for both college and preparatory work, including a statement of honorable dismissal. They must take the Scholastic Aptitude Test given by the College Entrance Examination Board if this test has not been taken previously.

As a general practice, transfer students are not admitted to advanced standing later than the beginning of the sophomore year. Four semesters of study at Swarthmore College constitute the minimum requirement for a degree, two of which must be those of the senior year. Applications for transfer must be filed by April 15 of the year in which entrance is desired. Decisions on these applications are announced by June. Application for transfer at mid-year must be received by November 15. A limited amount of financial assistance is available for transfer students in their first year at Swarthmore.

* Directions for reaching the College can be found inside the back cover of this catalogue.

Expenses

TUITION AND FEES

For many years actual tuition charges have covered approximately half the educational costs at Swarthmore. The remainder has been covered by endowment income and annual giving. During four years, each student currently benefits from a subsidy from these sources of over $12,000.

Charges for the academic year 1980-81 (two semesters):

Tuition	$5,400.00*
General Fee	417.50
Board and Room	2,295.00
Total Resident Charges	$8,112.50

While a general charge for board and room is made, this may be divided into $1,145 for board and $1,150 for room. Approximately $76 of the General Fee of $417.50 has been designated Student Activity Fee. The balance covers library and laboratory fees, athletic fees, student health services and other items. An advance deposit of $100 is required of all new students in order to reserve a place in college for the coming year. A similar deposit of $100 is required of returning students prior to registration for each semester. These deposits are credited against the bill for tuition, board, and room.

Payment of one-half of the total sum is due not later than the first day of classes each semester. Payments received during the first fifteen days after the beginning of classes will be subject to a one per cent late payment fee and any payments received after the fifteen-day period will be subject to a five per cent late payment fee. Bills are mailed before the opening of each term. Payments should be made by check or draft to the order of SWARTHMORE COLLEGE. A student is not a registered student at Swarthmore College, nor on any class roll, until his or her bill is paid. Correspondence about financial matters should be addressed to Miss Caroline Shero, Controller.

Students are urged to establish a checking account at their home bank or a bank near the College in order to pay Book Store charges and other incidental bills. Personal checks on such accounts may be cashed at the Business Office during stated hours.

Refund Policy for withdrawals for valid reasons as approved by the Dean: No refund of the $100 advance payment deposit will be made in event of withdrawal. All other payments will be refunded if the student does not begin a semester. 80% of tuition and general fee, less the deposit, will be refunded if the student withdraws during the first week of a semester, 60% if during the second week, 40% if during the third week, and 20% during the fourth week, none thereafter. In case of absence or withdrawal from the College, and provided due notice has been given, there will be a pro rata refund of two-thirds of the board and room charge for any time in excess of two weeks.

Students engaged in independent projects away from the College for which regular academic credit is anticipated are expected to register in advance in the usual way and pay normal tuition. If the student is away from the College for a full semester no charge for board, room or general fee will be made but if a student is away only for a part of a semester, board may be charged on a pro rata basis by prior arrangement.

The regular College tuition covers the normal program of four courses per term as well as variations of as many as five courses or as few as three courses. Students who elect to carry more than five courses incur a unit charge for the additional course ($675.00) or half course ($337.50), although they may within the regular tuition so vary their programs as to average as many as five courses in the two semesters of any academic year. College policy does not permit programs of fewer than three courses for degree students in their first eight semesters of enrollment.

* Tuition for students who are candidates for the Master's Degree is the same as that for undergraduates, but the General Fee is reduced to $50.

TUITION PAYMENT PLAN

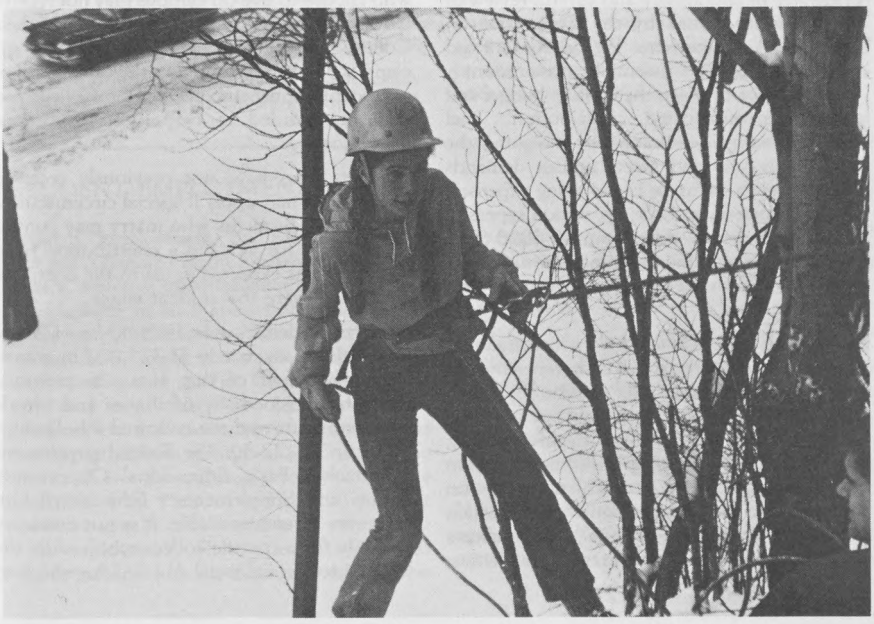
Many parents or students may wish to pay tuition, fees, and residence charges on a monthly basis. Details of monthly payment plans offered by the Insured Tuition Payment Plan administered by Richard C. Knight Insurance Agency Inc. of Boston, and the Girard Bank of Philadelphia, Pennsylvania, will be furnished by the College prior to issuance of the first semester's bill.

ACCIDENT AND SICKNESS INSURANCE

The General Fee includes a charge of $37.50 for mandatory supplemental accident and sickness insurance. Prescribed medications, laboratory tests, x-rays, outpatient specialist visits, ambulance, emergency hospitalization and surgery are some of the services that will have guaranteed 100% coverage up to $1,000 and then 80% coverage up to $5,000 per academic year. The new plan will avoid delays in various forms of care and make available, at no out-of-pocket expense to students or their parents, many services not covered previously by either the optional insurance or family insurance policies.

For claims to be processed each student must file a card noting family insurance coverage. Worth Health Center will process all claims except for injuries connected with intercollegiate athletics which will be handled by the Head Trainer at Lamb-Miller Field House.

For foreign students who do not have insurance coverage effective in America to an equivalent of Blue Cross-Blue Shield programs, full twelve-month coverage at a charge of $125.00 is required.



Financial Aid

The College strives to make it possible for all students who are admitted to attend Swarthmore, regardless of their financial circumstances, and to enable them to complete their education when financial reversals take place. Financial aid awards are assigned without regard to race, sex, religious preference or handicap. Thirty-eight percent of the total student body currently receive aid from the College, and aid from other sources brings to approximately forty-one percent the number of students receiving financial assistance. Most financial aid awarded by the College is based upon financial need and is usually a combination of grant, loan, and student employment.

A prospective aid student must apply for College as well as outside assistance at the time of application for admission: admission and financial aid decisions are, however, made separately, and need is met, assuming sufficient funding. The Financial Aid Form (and supplement) of the College Scholarship Service is the form required of financial aid applicants. Instructions for obtaining and filing a Financial Aid Form (and supplement) with the College Scholarship Service are included on the admissions application. The principles of this agency and careful review of its recommendations by the Committee on Financial Aid determine the amount of aid needed in each case. Essentially this amount is the difference between the College budget and a family's anticipated contribution. That contribution is determined by weighing the family's income and assets against demands made by such items as taxes, living expenses, medical expenses, and siblings' tuition expenses. It also includes the expectation of $800 from the student's summer earnings as well as a portion of his or her personal savings and assets.

For 1980-81 the College bill, which includes tuition, room and board, a comprehensive fee and the health insurance fee, will be $8,112.50. This comprehensive fee covers not only the usual student services — health, library, laboratory fees, for example — but admission to all social, cultural, and athletic events on campus. The total budget figure against which aid is computed is $8,890. This allows $777.50 for books and personal expenses, exclusive of travel.

An admitted student seeking aid must submit to the Finanical Aid Office a photocopy of the parents' most recent federal income tax return. When a student receives financial aid from a source other than the College, the College subtracts the amount of that financial aid from the Swarthmore award. This equitable distribution of total available resources enables the College to assist additional students. Thus, the amount of financial aid a student may expect to receive from the College is determined by other grants received as well as by the anticipated family contribution.

In keeping with the policy of basing financial aid upon need, the College reviews each student's award annually. Mid-year each student who has aid must submit a new financial aid application and a copy of the parents' federal income tax return (all pages and schedules). This information is analyzed by the College Scholarship Service and reviewed by the Committee on Financial Aid under the guidance of the Director. A student's aid is not withdrawn unless need is no longer demonstrated. Generally, assistance is available only for the duration of a normal four-year undergraduate program. Students who choose to live off campus may not receive College grant/loan assistance in excess of their College bill, although the cost of living off campus will be recognized in the calculation of a student's financial need. Non-College aid may be awarded to help meet off-campus living costs.

Students who have not previously received financial aid may apply if special circumstances have arisen. Students who marry may continue to apply for aid, but a contribution from the parents is expected equal to the contribution made were the student single.

For the academic year 1979-80 the College awarded approximately $1,325,000 in grants. About one half of that sum was provided through the generosity of alumni and friends by special gifts and the endowed scholarships listed on pp. 22-30. The Federal government also makes Basic Educational Opportunity Grants and Supplementary Educational Opportunity Grants available. It is not necessary to apply for a specific college scholarship; the Committee on Financial Aid decides who is to

receive endowed scholarships and others are helped from general scholarship funds. Although some endowed scholarships are restricted by locality, sex, religion or physical vigor, the College's system of awarding aid makes it possible to meet need without regard to these restrictions. *Financial need is a requirement for all scholarships unless otherwise indicated.*

LOAN FUNDS

Long term loan funds with generous repayment terms combine with Swarthmore's program of scholarships and grants to enable the College to meet the needs of each student.

Interest on both National Direct Student Loans and Swarthmore College loans is 3% on the unpaid balance beginning nine months after the student terminates higher education.

The College also maintains special loan funds which are listed below:

The Class of 1916 Loan Fund
The Class of 1920 Loan Fund
The Class of 1936 Loan Fund
The Class of 1937 Loan Fund
The John A. Miller Loan Fund
The Paul M. Pearson Loan Fund
The Thatcher Family Loan Fund
The Ellis D. Williams Fund
The Swarthmore College Student Loan Fund

The Joseph W. Conard Memorial Fund, established by friends of the late Professor Conard, provides short-term loans without interest to meet student emergencies. Income earned by *The Alphonse N. Bertrand Fund* is also available for this purpose.

Because the College does not have enough Swarthmore College Loan and National Direct Student Loan funds to assist all students in need, some students are asked to seek loans through the Guaranteed Student Loan Program available through local banks. The interest on this long-term, low-interest, educational loan is federally subsidized while the borrower is still in school. Nine months after the borrower leaves school, interest begins to accrue at 7% and principal repayment must begin. The Guaranteed Student Loan (and the interest subsidy) is available to all students, without regard to family income. The maximum an undergraduate may borrow through this program is $2,500 annually, although, $7,500 is the aggregate maximum for the full-undergraduate program.

STUDENT EMPLOYMENT

Student employment on the Swarthmore campus is handled by the Student Employment Office, which is under student direction. Jobs are available in such areas as the dining hall, library, departmental offices and the post office, and applications are made when students arrive in the fall. On-campus rates of pay run from $2.64 to $3.30 per hour. Students on financial aid are usually offered the opportunity to earn up to $650 during the year and are given hiring priority under the guidance of the Director of Financial Aid, but there are usually jobs available for others who wish employment. The Student Employment Office publicizes local off-campus and temporary employment opportunities. Students are generally able to carry a moderate working schedule without detriment to their academic performance.

For students who qualify under the federal College Work-Study Program (most needy students), off-campus placements in public or private, non-profit agencies in the local or Philadelphia area can be arranged through the Financial Aid Office during the academic year or summer. Among suitable agencies are hospitals, schools, museums, social service agencies and local, state or federal government agencies.

Swarthmore College National and Regional Scholarships

On occasion Swarthmore College awards four-year National and Regional Scholarships to the outstanding men and women entering the freshman class.

Midwest Scholarships are awarded to students who reside in Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North and South Dakota, Oklahoma, or Wisconsin.

New England Scholarships are awarded to students who reside in Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, or Vermont.

Pacific Scholarships are awarded to students who reside in Alaska, California, Hawaii, Nevada, Oregon, or Washington.

Rocky Mountain Scholarships are awarded to students who reside in Arizona, Colorado, Idaho, Montana, New Mexico, Utah, or Wyoming.

Southeast Scholarships are awarded to students who reside in Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, or Texas.

The awards are made to those candidates who, in the opinion of Committees of Award, rank highest in scholarship, leadership, character, and personality. The amount of the annual award varies from $300 to $8112 according to the financial need of the winner. In those instances where there is no financial need, scholarships carry an honorary award.

Other Scholarships

The Aetna Life and Casualty Foundation Scholarship provides assistance to qualified students with financial need.

The Vivian B. Allen Foundation provides scholarship aid to enable foreign students to attend Swarthmore College, as part of the Foundation's interest in the international exchange of students.

The Frank and Marie Aydelotte Scholarship is awarded biennially to a new student who shows promise of distinguished intellectual attainment based upon sound character and effective personality. The award is made in honor of Frank Aydelotte, President of the College from 1921-1940, and originator of the Honors program at Swarthmore, and of Marie Osgood Aydelotte, his wife.

The Boyd and Ruth Barnard Fund Grants are awarded by the Department of Music to students at the College who show unusual promise as instrumentalists or vocalists and who need help to pay for private instruction.

The Curtis Bok Scholarship was established in the College's Centennial Year 1964 in honor of the late Philadelphia attorney, author and jurist, who was a Quaker and honorary alumnus of Swarthmore. The scholarship is assigned annually to a junior or senior whose qualities of mind and character indicate a potential for humanitarian service such as Curtis Bok himself rendered and would have wished to develop in young people. Students in any field of study, and from any part of this country or from abroad, are eligible. The scholarship is renewable until graduation.

The Book and Key Scholarship, established by the Book and Key men's senior honorary society in 1965 when the Society dissolved itself, is awarded each year to a senior man who has shown quality of leadership and has demonstrated through past performance his eagerness to give service to college and community. He should rank high in scholarship, character and personality.

The Edward S. Bower Memorial Scholarship, established by Mr. and Mrs. Ward T. Bower in memory of their son, Class of '42, is awarded annually to a man or woman student who ranks high in scholarship, character, and personality.

The Daniel Walter Brenner Memorial Scholarship, established by family and friends in memory of Daniel W. Brenner, Class of 1974, is awarded to a senior majoring in biology who is distinguished for scholarship and an interest in plant ecology, or wildlife preservation, or animal behavior research. The recipient is chosen with the approval of biology and classics faculty.

The Leon Willard Briggs Scholarship was established by a bequest of Ina Carey Diller in honor of Leon Willard Briggs '17, to be awarded to worthy engineering students with financial need. In the event there are no engineering students who need the scholarships, they shall be awarded to students engaged primarily in the study of classics and belles lettres.

The Robert C. Brooks Scholarship was established as a memorial to Professor Brooks by a number of his former students. It is available to a major in Political Science in the junior or senior year.

The Edna Pownall Buffington Fund was established during the College's Centennial Year of 1964. The income from this Fund is used to provide scholarships for a student or students attending Swarthmore College who are concentrating their studies in the field of the social sciences and who indicate an interest in the objects or purposes of the American Friends Service Committee and a desire to serve in those fields following their graduation and post-graduate work. Awards are made to students in any of the four classes.

The Chi Omega Scholarship provides an award annually to a member of the freshman class. Preference is given to daughters or sons of members of the fraternity.

The Susan P. Cobbs Scholarship, established in 1977 through a bequest by Susan P. Cobbs, Dean Emerita of Swarthmore, is awarded to a junior or senior student majoring in some branch of the Classics. The recipient is designated by the Classics Department.

The Cochran Memorial Scholarship was established by a bequest of Marie Cochran in memory of the Cochran family. It is given annually to a student matriculating at Swarthmore College.

The Sarah Antrim Cole Scholarship was founded by her parents in memory of Sarah Antrim Cole of the Class of 1934. It is awarded to a graduate of the Worthington High School, Worthington, Ohio.

The Charles A. Collins Scholarship Fund is awarded every year to a deserving student who is in need of financial assistance, in accordance with the donor's will.

The N. Harvey Collisson Scholarship established by his family and the Olin Mathieson Charitable Trust in memory of N. Harvey Collisson of the Class of 1922 is awarded to a freshman man or woman. Selection will place emphasis on character, personality and ability.

The Marion L. Dannenberg Scholarship is awarded to a freshman student with financial need who ranks high in personality, character and scholarship. This endowment is in memory of Mrs. Dannenberg who was mother and grandmother of six students who attended Swarthmore.

The Delta Gamma Scholarship is to be awarded to a blind student at Swarthmore College. In any year in which there is no such candidate the fund may be awarded to a freshman woman.

The Francis W. D'Olier Scholarship, in memory of Francis W. D'Olier of the Class of 1907, is awarded to a freshman. Selection will place emphasis on character, personality and ability.

The Howard S. and Gertrude P. Evans Scholarship Fund provides scholarships for worthy students, preference being given to students with highest scholarship from high schools of Delaware County, PA.

The J. Horace Ervien Scholarships are awarded annually, with preference given to students who plan to major in engineering. Consideration will be given to academic qualifications, financial need, character and qualities of leadership. The scholarship is renewable for qualified students. These scholarships were

named in a bequest by Mrs. Elsa G. Giele Ervien in honor of her husband, J. Horace Ervien, B.S. '03, C.E. '10.

The Donald Renwick Ferguson Scholarship, established by Mrs. Amy Baker Ferguson, in memory of her husband, Donald Renwick Ferguson, M.D., of the Class of 1912, is awarded to a young man who is looking forward to the study of medicine.

The Joyce Mertz Gilmore Scholarship is awarded to an entering freshman, and may be renewed for each of the following three undergraduate years. The recipient is chosen on the basis of mental vigor, concern for human welfare, and the potential to contribute to the College and the Community outside. The award was established in 1976 by Harold Mertz '26 in memory of Joyce Mertz Gilmore, who was a member of the class of 1951.

The Barbara Entenberg Gimbel Scholarship Fund was endowed in memory of Barbara Entenberg Gimbel '39 by her husband, Dr. Nicholas S. Gimbel. The scholarship is awarded on the basis of need to a worthy student, with preference to a black candidate.

The Mary Lippincott Griscom Scholarship is given to a woman student with financial need, who ranks high in character, personality and scholarship. Preference is given to a member of the Society of Friends.

The Stella and Charles Guttman Foundation Scholarships were established in 1964 by a grant from the Foundation to provide scholarships to defray all or part of the cost of tuition and fees for students who require financial assistance. Preference is given to students of recognized ability who have completed two academic years of college and who are contemplating graduate or professional study. The scholarships are renewable for a second year.

The A. Price Heusner Scholarship, given by his family in memory of A. Price Heusner, Class of 1932, is awarded to an upperclassman from the Middle West. Preference is given to a premedical student. Consideration is given to the candidate's character, demonstrated concern for the welfare of others, and participation in team activities, as well as academic standing.

The Rachel W. Hillborn Scholarship was founded by Anne Hillborn Philips of the Class of 1892 in memory of her mother, with the stipulation that the income shall go to a student in the junior or senior class who is studying for service in the international field. Preference is given to a Friend or to one who intends to contribute to world understanding through diplomatic service, participation in some international government agency, the American Friends Service Committee, or similar activities.

The Hadassah M.L. Holcombe Scholarship is awarded to a freshman with financial need and is renewable for four years at the discretion of the College. Preference will be given to members of the Society of Friends.

The Everett L. Hunt Scholarship, endowed by the Class of 1937 in the name of its beloved emeritus professor and dean, provides an unrestricted scholarship to be awarded annually by the College.

The Aaron B. Ivins Scholarship is awarded annually to a young man of the graduating class of Friends Central School, Overbrook, Philadelphia. This scholarship is awarded by the faculty of Friends Central School, and is subject to the approval of Swarthmore College.

The George K. and Sallie K. Johnson Fund provides aid during the senior year for young women who are fitted to become desirable teachers.

The Howard Cooper Johnson Scholarship, established by Howard Cooper Johnson '96, is awarded on the basis of all-around achievement to a male undergraduate who is a member of the Society of Friends.

Kappa Alpha Theta Scholarship, established by Kappa Alpha Theta Fraternity at Swarthmore, is awarded annually to a woman student.

The Kappa Kappa Gamma Scholarship provides an award to a member of the freshman class, renewable each year. Preference is given to a relative of members of the fraternity.

The Jessie Stevenson Kovalenko Scholarship Fund, the gift of Michel Kovalenko in memory of his

wife, is awarded to a student, preferably a woman, in her junior or senior year and a major in astronomy, or to a Swarthmore graduate, preferably a woman, for graduate work in astronomy at Swarthmore or elsewhere.

The Walter W. Krider Scholarship was established by his wife and daughter for a young man who ranks high in scholarship, character and personality.

The Lafore Scholarship is awarded in memory of John A. Lafore of the Class of 1895. The College in granting this scholarship gives preference to qualified candidates who are descendants of Amand and Margaret White Lafore.

Eugene M. Lang Opportunity Grants. Awarded each year to as many as four entering students. Selection by a special committee on the basis of distinguished academic and extra-curricular achievement and demonstrable interest in social service. Stipends are based on financial need and take the form of full grants up to the amount of total college charges. Each Lang Scholar is also eligible for summer or academic year research or community service support, while an undergraduate, up to a maximum of $5,000 and for a $2,000 fellowship for graduate study. The program is made possible by the gift of Eugene M. Lang '38.

The Ida and Daniel Lang Scholarship established by their son, Eugene M. Lang of the Class of 1938, provides financial assistance for a man or woman who ranks high in scholarship, character and personality.

The E. Hibberd Lawrence Scholarship provides for a scholarship to an incoming freshman man or woman who ranks high in scholarship, character, and personality.

The Stephen Girard Lax Scholarship, established by family, friends and business associates of Stephen Lax '41, is awarded on the basis of financial need every two years to a student entering the junior year and showing academic distinction, leadership qualities, and definite interest in a career in business.

The Scott B. Lilly Scholarship, endowed by Jacob T. Schless of the Class of 1914 at Swarthmore College, was offered for the first time in 1950. This scholarship is in honor of a former distinguished Professor of Engineering and, therefore, students who plan to major in engineering are given preference. An award is made annually.

The Christian R. and Mary F. Lindback Foundation Scholarship is awarded to deserving students from the States of Pennsylvania, New Jersey, Delaware or Maryland.

The Long Island Quarterly Meeting, N.Y., Scholarship, is awarded annually by a committee of that Quarterly Meeting.

The Mary T. Longstreth Scholarship was founded by Rebecca C. Longstreth in memory of her mother and is awarded annually to assist a young woman student to pursue her studies in the College.

The Edward Martin Scholarships, established by a bequest of Edward Martin, friend of Swarthmore College, provides financial aid to juniors and seniors majoring in Biology, or pre-medical students taking substantial work in this field. Awards are made in consultation with the Department of Biology.

The Thomas B. McCabe Achievement Awards, established by Thomas B. McCabe '15, are awarded to entering students from the Delmarva Peninsula, and Delaware, Montgomery and Chester Counties, Pennsylvania, who give promise of leadership. In making selections, the Committee places emphasis on ability, character, personality, and service to school and community. These awards provide a minimum annual grant of tuition, or a maximum to cover tuition, fees, room and board, depending on need. Candidates for the McCabe Awards must apply by January 15 for admission to the College.

The Peter Mertz Scholarship is awarded to an entering freshman outstanding in mental and physical vigor, who shows promise of spending these talents for the good of the college community and of the larger community outside. The award was established in 1955 by Harold, LuEsther and Joyce Mertz in memory of Peter Mertz, who was a member of the class of 1957. It is renewable for the undergraduate years.

The James E. Miller Scholarship. Under the will of Arabella M. Miller, funds are available annually for students from Delaware County

(with preference for residents of Nether Providence Township).

The Margaret Moore Scholarship Fund provides scholarships to foreign students with a preference given to students of South Asian origin.

National Society of Professional Engineers Scholarships are awarded annually by the College in cooperation with the Society. Prospective engineers apply for these awards through their home state's branch of the NSPE. NSPE Scholarships currently carry a minimum stipend of $1,000, with assistance in excess of that amount based on the scholar's need.

The Florence Eising Naumburg Scholarship, named in 1975 in honor of the mother of an alumna of the Class of 1943, is awarded to a student whose past performance gives evidence of intellectual attainment, leadership, and character, and who shows potential for future intellectual growth, creativity, and scholarship, and for being a contributor to the College and ultimately to society.

The Howard Osborn Scholarships, established by Howard Osborn in memory of his mother and father, Viola L. Osborn and Frank Osborn, are awarded to worthy students of good character who maintain satisfactory grades and who require financial assistance.

The Harriet W. Paiste Fund provides a scholarship for a young woman who is a member of the Society of Friends (Philadephia Yearly Meeting).

The Rogers Palmer Scholarships, established in 1973 by Rogers Palmer of the Class of 1926, are awarded to members of the freshman class who show promise of leadership and who have need of financial assistance. The scholarships are renewable for a total of four years at the discretion of the College.

The Penniman Scholarship Fund was established by Ellen Penniman Willets in honor of Dr. Anson Warren and Jane W. Griscom Penniman and David Joseph Griscom. It is awarded to a student with financial need, with preference given to great grandchildren of the Pennimans.

The T.H. Dudley Perkins Memorial Scholarship is awarded annually to an entering freshman on the basis of qualities of manhood, force of character and leadership; literary and scholastic ability; physical vigor as shown by participating in out-of-doors sports or in other ways.

The Cornelia Chapman and Nicholas O. Pittenger Scholarship established by family and friends is awarded to an incoming freshman man or woman who ranks high in scholarship, character and personality and who has need for financial assistance

The Anthony Beekman Pool Scholarship. This scholarship is awarded to an incoming freshman man of promise and intellectual curiosity. It is given in memory of Tony Pool of the Class of 1959.

The Presser Foundation Scholarship is awarded annually to one or more students, selected by the President and the Department of Music, who plan to become teachers of music.

The Mary Coates Preston Scholarship Fund. A sum of money has been left by the will of Elizabeth Coates, the annual interest of which provides a scholarship to a young woman student in Swarthmore College. Preference is given to a relative of the donor.

The Robert Pyle Scholarship was established by his sisters, Margery Pyle and Ellen Pyle Groff, in memory of Robert Pyle of the Class of 1897 and for many years a member of the Board of Managers. Applicants who show promise of intellectual attainment based upon sound character and effective personality and who reside in Chester County are given preference.

The Raruay-Chandra and Niyomsit Scholarships are given by Renoo Suvarnist '47 in memory of his parents. They are given in alternate years: the Ruruay-Chandra Scholarship to a woman for her senior year, and the Niyomsit Scholarship to a man for his senior year, who has high academic standing and real need for financial aid. Preference is given to a candidate who has divorced or deceased parents or a deceased mother or father.

The Lily Tily Richards Scholarship, established by Peirce L. Richards, Jr., in memory of his wife, Lily Tily Richards '29, is awarded to a woman distinguished for high scholarship, character, personality and physical vigor.

The Adele Mills Riley Memorial Scholarship, founded by her husband, John R. Riley, was awarded for the first time for the academic year 1964-65. An annual award subject to

renewal is made to a deserving student, man or woman. Selection stresses the candidate's capacity for significant development of his or her interests and talents during the college years. Qualities of intellectual promise as well as potential for service are sought in making this appointment.

The Byron T. Roberts Scholarship, endowed by his family in memory of Byron T. Roberts, '12, is awarded annually to an incoming student and is renewable for his or her years of study at Swarthmore.

The Louis N. Robinson Scholarship was established during the College's Centennial year by the family and friends of Louis N. Robinson. Mr. Robinson was for many years a member of the Swarthmore College faculty and founder of the Economics Discussion Group. A member of the junior or senior class who has demonstrated interest and ability in the study of Economics is chosen for this award.

The Edith A. Runge Scholarship Fund, established by the will of Edith A. Runge of the Class of 1938, provides assistance annually to students who have need of financial aid.

The David Barker Rushmore Scholarship, established in honor of David Barker Rushmore, Class of 1894, by his niece Dorothea Rushmore Egan '24, is awarded annually to a worthy student who plans to major in Engineering or Economics.

The Katharine Scherman Scholarship is awarded to a student with a primary interest in the arts and the humanities, having special talents in these fields. Students with other special interests, however, will not be excluded from consideration. Awarded in honor of Katharine Scherman, of the Class of 1938, it is renewable for the full period of undergraduate study.

The William G. and Mary N. Serrill Honors Scholarship is a competitive scholarship for men, awarded to a candidate for admission to the College, based upon the general plan of the Rhodes Scholarships. Preference will be given to men who are residents of Abington Township, including Jenkintown and Glenside, Montgomery County, Pennsylvania.

The Clinton G. Shafer Scholarship endowed by his family in memory of Clinton G. Shafer, of the Class of 1951, is awarded to students interested in engineering and physical science. The committee in making its selection considers character, personality and leadership.

The Philip T. Sharples Scholarship, a four-year scholarship open to entering freshmen, is designed to honor and encourage young men in engineering or physical science. The committee, in making its selections, has regard for candidates who rank highest in scholarship, character, personality, leadership, and physical vigor. At least one scholarship is given each year.

The Annie Shoemaker Scholarship is granted annually to a young woman of the graduating class of Friends Central School, Overbrook, Philadelphia. This scholarship is awarded by the faculty of Friends Central School, and is subject to the approval of Swarthmore College.

The Thomas H. and Mary Williams Shoemaker Fund provides scholarships annually for children of Friends.

The Sarah W. Shreiner Scholarship, given in loving memory by her daughter, Leah S. Leeds of the Class of 1927, is awarded annually to a woman who ranks high in scholarship, character and personality.

The William C. and Barbara Tipping Sieck Scholarship is awarded annually to a student showing distinction in academics, leadership qualities and extra-curricular activities and who indicates an interest in a career in business.

The W.W. Smith Charitable Trust provides scholarships for worthy Philadelphia County area entering freshmen.

The Cindy Solomon Memorial Scholarship is awarded by preference to a young woman in need of financial assistance, and who has special talent in poetry or other creative and imaginative fields.

The Babette S. Spiegel Scholarship Award, given in memory of Babette S. Spiegel, Class of 1933, is awarded to a student showing very great promise as a creative writer (in any literary form) who has need of financial assistance. The Department of English determines those eligible.

The Clarence K. Streit Scholarship is awarded to a student entering the junior or senior year and majoring in history. Preference is given to persons in the Honors Program, outstanding in initiative and scholarship, who demonstrate a particular interest in Early American History. This scholarship honors Clarence K. Streit, author of *Union Now: A Proposal For An Atlantic Federal Union of the Free,* whose seminal ideas were first made public in three Cooper Foundation lectures at Swarthmore.

The Marshall P. Sullivan Scholarship Fund was established by Creth and Sullivan, Inc., in memory of Marshall P. Sullivan of the Class of 1897. Preference is given to graduates of George School; graduates of other Friends schools or other persons are eligible next.

The Katherine Bennett Tappen, Class of 1931, Memorial Scholarship, established in 1980 by her sister, Isabelle Bennett Cosby, Class of 1928, is awarded to a freshman student. The scholarship is renewable for four years at the discretion of the College. Preference is given to a resident of the Delmarva Peninsula.

The Newtown E. Tarble Award, established by Newton E. Tarble of the Class of 1913, is granted to a freshman man who gives promise of leadership, ranks high in scholarship, character and personality, and resides west of the Mississippi River or south of Springfield in the State of Illinois.

The Jonathan K. Taylor Scholarship, in accordance with the donor's will, is awarded by the Board of Trustees of the Baltimore Monthly Meeting of Friends. First preference is to descendants of Jonathan K. Taylor; then to members of the Baltimore Yearly Meeting of Friends; then to others.

The Phebe Anna Thorne Fund provides an income for scholarships for students whose previous work has demonstrated their earnestness and ability. This gift includes a clause of preference to those students who are members of the New York Monthly Meeting of Friends.

The Titus Scholarships established by the will of Georgiana Titus of the Class of 1898 are awarded to young women in order that they may pursue their studies in the College.

The Audrey Friedman Troy Scholarship, established by her husband, Melvin B. Troy '48, is awarded to a freshman man or woman. The scholarship is renewable for four years at the discretion of the College. In awarding the scholarship, prime consideration is given to the ability of the prospective scholar to profit from a Swarthmore education, and to be a contributor to the College and ultimately to society.

The Daniel Underhill Scholarship was established by a bequest from Edward Clarkson Wilson '91, and a gift from Daniel Underhill '94, in memory of this member of the first Board of Managers. The award is made at the discretion of the College.

The William Hilles Ward Scholarships, in memory of William Hilles Ward of the Class of 1915, are awarded annually, preferably to students who plan to major in science. The committee in making its selection has regard for candidates who are most deserving of financial assistance.

The Barclay and Edith Lewis White Scholarship is awarded annually by the Music Department to a student of music.

The Samuel Willets Fund. This fund provides an annual income for scholarships. A portion of the fund is assigned for scholarships in the name of Mr. Willets' children, Frederick Willets, Edward Willets, Walter Willets, and Caroline W. Frame.

The I.V. Williamson Scholarship. Preference is given to graduates of Friends Central, George School, New York Friends Seminary, Baltimore Friends School, Wilmington Friends School, Moorestown Friends School, Friends Academy at Locust Valley, Sidwell Friends School and Brooklyn Friends School.

The Edward Clarkson Wilson Scholarship has been established at Swarthmore by friends of Edward Clarkson Wilson, '91, formerly Principal of the Baltimore Friends School. It is awarded each year to a former student of the Baltimore Friends School, who has been approved by the faculty of the school, on the basis of high character and high standing in scholarship.

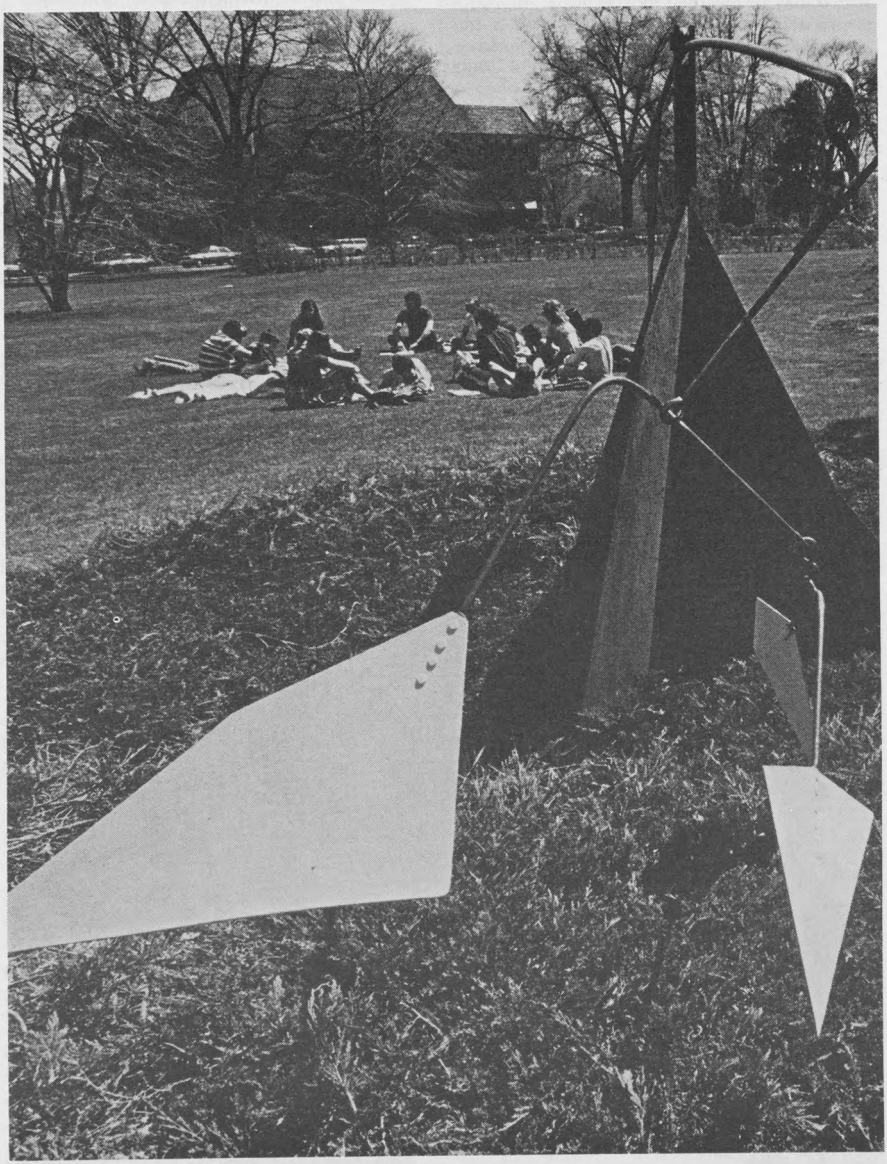
The Letitia M. Wolverton Scholarship Fund, given by Letitia M. Wolverton of the Class of 1913, provides scholarships for members of the junior and senior classes who have proved

to be capable students and have need for financial assistance to complete their education at Swarthmore College.

The Mary Wood Fund provides a scholarship which may be awarded to a young woman who is preparing to become a teacher.

The income from each of the following funds is awarded at the discretion of the College.

The Barclay G. Atkinson Scholarship Fund
The Rebecca M. Atkinson Scholarship Fund
The Class of 1913 Scholarship Fund
The Class of 1914 Scholarship Fund
The Class of 1915 Scholarship Fund
The Class of 1917 Scholarship Fund
The Class of 1925 Scholarship Fund
The William Dorsey Scholarship Fund
The George Ellsler Scholarship Fund
The Caroline W. Frame Scholarship Fund
The Joseph E. Gillingham Fund
The Thomas L. Leedom Scholarship Fund
The Sarah E. Lippincott Scholarship Fund
The David L. Price Scholarship
The Reader's Digest Foundation Endowed Scholarship Fund
The Mark E. Reeves Scholarship Fund
The Edward Rivlin Memorial Scholarship
The Seventh Congressional District Scholarship
The Shell Assists Scholarship
The W.W. Smith Charitable Trust Scholarship Fund
The Frank Solomon Memorial Scholarship Fund
The Mary Sproul Scholarship Fund
The Helen Squier Scholarship Fund
The Walter Frederick Sims Scholarship Fund
The Francis Holmes Strozier Memorial Scholarship Fund
The Joseph T. Sullivan Scholarship Fund
The Deborah F. Wharton Scholarship Fund
The Thomas H. White Scholarship Fund
The Edward Clarkson Wilson and Elizabeth T. Wilson Scholarship Fund
The Thomas Woodnutt Scholarship Fund



College Life

HOUSING

Swarthmore is primarily a residential college, conducted on the assumption that the close association of students and instructors is an important element in education. Most students live in College dormitories, which include coeducational housing as well as single sex dormitories and sections. Many members of the faculty live on or near the campus, and are readily accessible to students.

Residence Halls

Thirteen residence halls, ranging in capacity from 16 to 235 students, offer a diversity of housing styles. These dormitories include: Ashton and Woolman Houses; Dana and Hallowell Halls which were opened in 1967; the upper floors in the wings of Parrish Hall; Wharton Hall, named in honor of its donor, Joseph Wharton, at one time President of the Board of Managers; Palmer, Pittenger and Roberts Halls on South Chester Road; two buildings on the Mary Lyon School property; Worth Hall, the gift of William P. Worth and J. Sharples Worth, as a memorial to their parents; and Willets Hall, made possible largely by a bequest from Phebe Seaman, and named in honor of her mother and aunts.

About seventy percent of dormitory areas are designated as coeducational housing either by floor, section, or entire dorm; the remaining areas are reserved for single sex housing. Dormitory sections may determine their own visitation hours up to and including twenty-four-hour visitation.

New students are assigned to rooms by the Deans. Efforts are made to follow the preferences indicated, and to accommodate special needs, such as physical handicaps. Other students choose their rooms in an order determined by lot. All students are expected to occupy the rooms to which they are assigned or which they have selected through the regular room choosing process unless authorized by the Deans to move. Permission must also be obtained from the Deans to reside outside college housing.

Dormitories remain open during Thanksgiving week but are closed to student occupancy during Christmas and Spring vacations. Students enrolled for the fall semester only are expected to vacate their dormitory rooms within twenty-four hours after their last scheduled examination. Freshmen, sophomores, and juniors are expected to leave immediately after their last examination in the spring so that their rooms may be prepared for use by Commencement visitors.

The insurance program for the College is designed to provide protection for College property and does not include the property of students or others. Students and their parents are strongly urged to review their insurance program in order to be sure that coverage is extended to include personal effects while at college.

Sharples Dining Hall

All students living on campus are required to subscribe to the College board plan for meals in the Philip T. Sharples Dining Hall. The board plan covers 19 meals a week. Although an effort is made to meet the dietary needs of all students, not all special requirements can be accommodated; permission to reside off campus will be extended to any student not able to participate in the board plan. The dining hall is closed during the Christmas and Spring vacations.

Tarble Social Center

Through the generosity of Newton E. Tarble of the Class of 1913, the building which formerly housed the College Library was completely renovated and, since 1967, has served as the College's Social Center. It includes recreational facilities, lounges, meeting rooms, and a snack bar.

Black Cultural Center

A Black Cultural Center, located in the Caroline Hadley Robinson House, provides a library and facilities for various cultural activities of special interest to black students. The Center and its program are guided by a director and a committee of black students, faculty, and administrators. Programs planned by the Center are open to all members of the College community.

Alice Paul Women's Center

The Alice Paul Women's Center, housed in Bond, was established to draw all women of the Swarthmore community together through common concerns. The Center, which serves faculty, students, faculty wives, staff and alumnae, maintains a library of resource books, pamphlets and periodicals, provides information, and sponsors a variety of programs, lectures, discussions and symposia for all members of the College community about issues relating to women.

RELIGIOUS LIFE

The religious life of the College is founded on the Quaker principle that the seat of spiritual authority lies in the Inner Light of each individual. The Society of Friends is committed to the belief that religion is best expressed in the quality of everyday living. There are accordingly no compulsory religious exercises. Students are encouraged to attend the churches of their choice. Seven churches are located in the borough of Swarthmore; other churches and synagogues may be found in the nearby towns of Morton, Media, Chester and Springfield. The Swarthmore Friends Meeting House is located on the campus. Students are cordially invited to attend its meeting for worship on Sunday. Extracurricular groups with faculty cooperation exist for the study of the Bible and the exploration of common concerns of religion.

STUDENT WELFARE

Health

The college physicians hold office hours every weekday at the College, where students may consult them without charge. Students should report any illness to the college physicians, but are free to go for treatment to another doctor if they prefer to do so.

As a part of the matriculation process each student must submit a brief medical history and health certificate prepared by the family physician on a form supplied by the College. Pertinent information about such matters as physical reserve, unusual medical episodes, severe allergies, or psychiatric disturbances will be especially valuable to the college Health Service in assisting each student. All this information will be kept confidential.

The Health Center staff cooperates closely with the Department of Physical Education

and Athletics. Recommendations for limited activity may be made for those students with physical handicaps. In occasional cases a student may be excused entirely from the requirements of the Physical Education Department, although adaptive programs are offered.

The Worth Health Center, a gift of the Worth family in memory of William Penn Worth and Caroline Hallowell Worth, houses offices for the college physicians and nurses, out-patient treatment facilities, offices of the Psychological Services director and staff, and rooms for students who require in-patient care. Registered nurses are on duty under the direction of the college physicians.

Each student is allowed ten days in-patient care in the Health Center per term without charge unless the services of a special nurse are required. After ten days, a charge of $5.00 per day is made. Students suffering from a communicable disease or from illness which makes it necessary for them to remain in bed must stay in the Health Center for the period of their illness. Ordinary medicines are furnished without cost, but a charge is made for special medicines, certain immunization procedures and laboratory tests, and transportation when necessary to local hospitals.

The medical facilities of the College are available to students injured in athletic activities or otherwise, but the College cannot assume additional financial responsibility for medical and surgical expenses arising from accidents. Insurance coverage for all students participating in athletics, however, is included in the mandatory health insurance package as is supplementary coverage for all accident injuries.

A program of psychological counseling services for students with personal or emotional problems is coordinated by a director, who also sees students for individual or group consultations. The director and the staff of psychological counselors hold office hours by appointment each week, and a consulting psychiatrist is available as necessary. Brief psychotherapy within the limits of available time will be given to students without charge. In instances where longer treatment is indicated, the student will be referred to an outside psychiatrist or psychologist.

Special educational seminars and workshops on issues of concern to the entire college community are also sponsored by the counselors, usually with the support of or in conjunction with student organizations or interest groups and the Deans. The counselors are also available to consult with faculty members, Resident Assistants, and other members of the college's supportive staff.

Student Advising

Each freshman is assigned to a faculty member who acts as course adviser until this responsibility falls to the chairman of the student's major department at the end of the sophomore year. Requests for a change of advisor should be addressed to the Dean and will be freely granted, subject only to equity in the number of advisees assigned to individual faculty members.

The Deans hold overall responsibility for the advising system. They are themselves available to all students for advice on any academic or personal matters, and for assistance with special needs, such as those arising from physical handicaps.

A consultant for testing and guidance is available to assist students with special problems of academic adjustment, study skills and reading proficiency. In addition, aptitude and interest tests may be given on request.

Resident assistants, selected from the junior and senior classes, are assigned to each of the dormitory sections.

Career Planning and Placement

The Office of Career Planning and Placement provides assistance to students in considering how a given major may relate to future employment, choosing an occupation, and locating employment during the summers and upon graduation. Students may also elect to

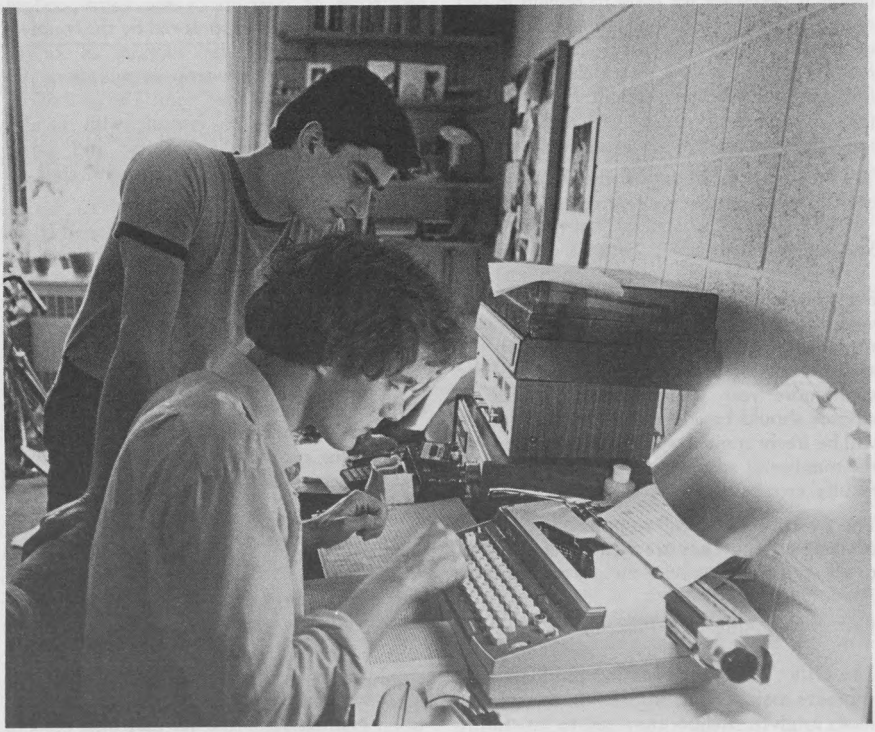
establish a file of credentials for use in seeking employment. Periodic conferences are planned and interviews are arranged with prospective employers. In addition, an Extern Program is offered through which students may observe at first hand the business and professional activities of alumni who are working in fields related to students' potential career interests. The program takes place during the spring recess.

Alumni Office

The Alumni Office keeps records of the addresses of all living graduates and alumni of the College. It helps edit the Swarthmore alumni magazine, and acts as liaison for the College with all alumni and alumni groups, interpreting to them the present plans and policies of the College.

Information Services Office

The Information Services Office helps prepare the several publications issued by the College and known as Swarthmore College Bulletins. These include the alumni magazine, the President's Report, the Catalogue, and other miscellaneous issues. In addition to this, the Information Services Office, with the assistance of the largely student operated News Bureau, works with the press and other communications media in publicizing news that is of interest to the general public.



Student Community

Student Conduct

The influence of the Society of Friends within the College community is one of the important factors in making Swarthmore what it is. Students who choose Swarthmore as their college should understand that they are accepting social and academic standards which, while subject to periodic review, are essential to the well-being of the community. In general, the life of students should be governed by good taste and accepted practice rather than elaborate rules. Certain regulations, however, are of particular importance and are listed below.

1. The possession and use of alcoholic beverages on the campus is regulated by State law and limited to those areas of the campus which are specified by the Student Council and the Dean. The observance of moderation and decorum in respect to drink is a student obligation. Disorderly conduct is regarded as a serious offense.

2. The use or possession of injurious drugs or narcotics without the specific recommendation of a physician and knowledge of the Deans subjects a student to possible suspension or expulsion.

3. The use or possession of firearms or other dangerous weapons is not permitted. Firecrackers or other explosives are prohibited. Tampering with fire alarms or fire prevention equipment is a serious offense.

4. No undergraduate may maintain an automobile while enrolled at the College without the permission of the Car Authorization Committee, a student-faculty group. This permission is not extended to freshmen. Day students may use cars for commuting to College, but special arrangements for stickers must be made for campus parking. More detailed information may be obtained from the Office of the Deans.

5. The participation by any student in any disruption or interference with the orderly programs, functions, or conduct of College activities of any kind is a serious offense.

Penalties for violations of College regulations such as those listed above are set by judicial committees or the Deans and may involve suspensions or expulsion. Standing regulations may be modified and new rules may be added at any time upon notice to the student body.

The College reserves the right to exclude at any time students whose conduct it regards as undesirable, and without assigning any further reason therefor. Neither the College nor any of its officers shall be under any liability whatsoever for such exclusion.

Student Council

The semi-annually elected Student Council represents the entire undergraduate community and is the chief body of student government. Its efforts are directed toward coordination of student activities and the expression of student opinion.

Committees of the Council include the Budget Committee, which regulates distribution of funds to student groups; the Elections Committee, which supervises procedure in campus elections; and the Social Committee (see below). In addition to these, there are several joint Faculty-Student Committees, whose student membership is appointed by Council.

Judicial Bodies

Two committees have different jurisdictions. The *Student Judiciary Committee*, elected by the entire student body, acts on cases of alleged violations of students' rules and campus regulations except as they fall within the sphere of the College Judiciary Committee. The *College Judiciary Committee* is composed of student, faculty and administration members. It has primary jurisdiction over cases that may involve academic dishonesty. It also acts upon

cases referred by or appealed from the Student Judiciary Committee. A more complete description of the judicial system is available from the office of the Dean.

Social Committee

An extensive program of social activities is managed by the Social Committee appointed by the Student Coucil. The program is designed to appeal to a wide variety of interests, and is open to all students. There is usually no charge for college social functions.

EXTRA-CURRICULAR ACTIVITIES

In addition to the foregoing organizations, Swarthmore students have an opportunity to participate in a program of extra-curricular activities wide enough to meet every kind of interest. There are more than thirty-five organized activities, not including departmental clubs or political organizations. They vary as greatly as the interests of the students vary. The College encourages students to participate in whatever activities best fit their personal talents and inclinations.

The Studio Arts Program

The Studio Arts Program, administered by the Department of Art, is an academic program, but the instruction and facilities are open to students who wish to participate on an extra-curricular basis. Refer to the Art Department program for a listing of credit and non-credit courses.

Music

The Department of Music administers and staffs several performing organizations. The College Chorus, directed by Professor Peter Gram Swing, rehearses three hours per week. (The College Singers, a select small chorus drawn from the membership of the Chorus, rehearses an additional one or two hours per week.) The College Orchestra, directed by Professor James D. Freeman, rehearses twice a week. (The Chamber Orchestra, a small, unconducted ensemble consisting of first-stand players from the Orchestra, also rehearses frequently.) Members of the Orchestra, other instrumentalists and solo singers can participate in the chamber music coaching program.

The Chorus and Orchestra give several public concerts each year at the College and elsewhere. Both organizations require auditions for membership. Several student chamber music concerts (in which all interested students have an opportunity to perform) are given each semester. These concerts also provide an opportunity for student composers to have their compositions performed publicly.

Practice and performance facilities in the Lang Music Building include 16 practice rooms (each with at least one piano), two concert and rehearsal halls (each with its own concert grand), two organs, two harpsichords, and an electronic studio. The Daniel Underhill Music Library has excellent collections of scores, books, and records.

The William J. Cooper Foundation presents a distinguished group of concerts each year on the campus. The Music Department administers a separate series of public concerts.

Dance

The Swarthmore College Dancers, a modern dance group directed by Professor Patricia Boyer, performs public concerts with works choreographed by students, the dance faculty and other professional choreographers.

For the past few years Swarthmore College has been the recipient of National Endowment for the Arts grants which have enabled the College, in conjunction with the William J. Cooper Foundation, to bring outstanding professional dance companies for short term residencies.

The Department of Physical Education and Athletics sponsors a coeducational performance group in Folk Dance.

There is also a Dance Ensemble sponsored by the Black Cultural Center.

Drama

Professor Lee Devin is Director of The Theatre. He supervises the drama program, which includes course work, workshops with guest directors, invited speakers, and a number of student-directed projects each semester. Interested students should consult the departmental statement in English Literature.

Athletics

Swarthmore's athletic policy is based on the premise that any sports program must be justified by the contributions which it can make to the educational development of the individual student who chooses to participate. In keeping with this fundamental policy, Swarthmore's athletic program is varied and extensive, offering every student a chance to take part in a wide range of sports. The College feels that it is desirable to have as many students as possible competing on its intercollegiate or club teams, or in intramural sports. Faculty members serve as advisers for several of the varsity athletic teams. They work closely with the teams, attending practices and many of the scheduled contests.

Swarthmore College Upward Bound

The Upward Bound Program at Swarthmore College, begun in 1964 and continued with Federal support, is intended to provide simultaneously a valuable experience for Swarthmore students and a service to members of surrounding communities. It offers both a six-week residential summer school in which Swarthmore students serve as counselors, and a series of activities during the academic year in which Swarthmore students serve as tutors. The program is administered by Edwin A. Collins, Project Director.

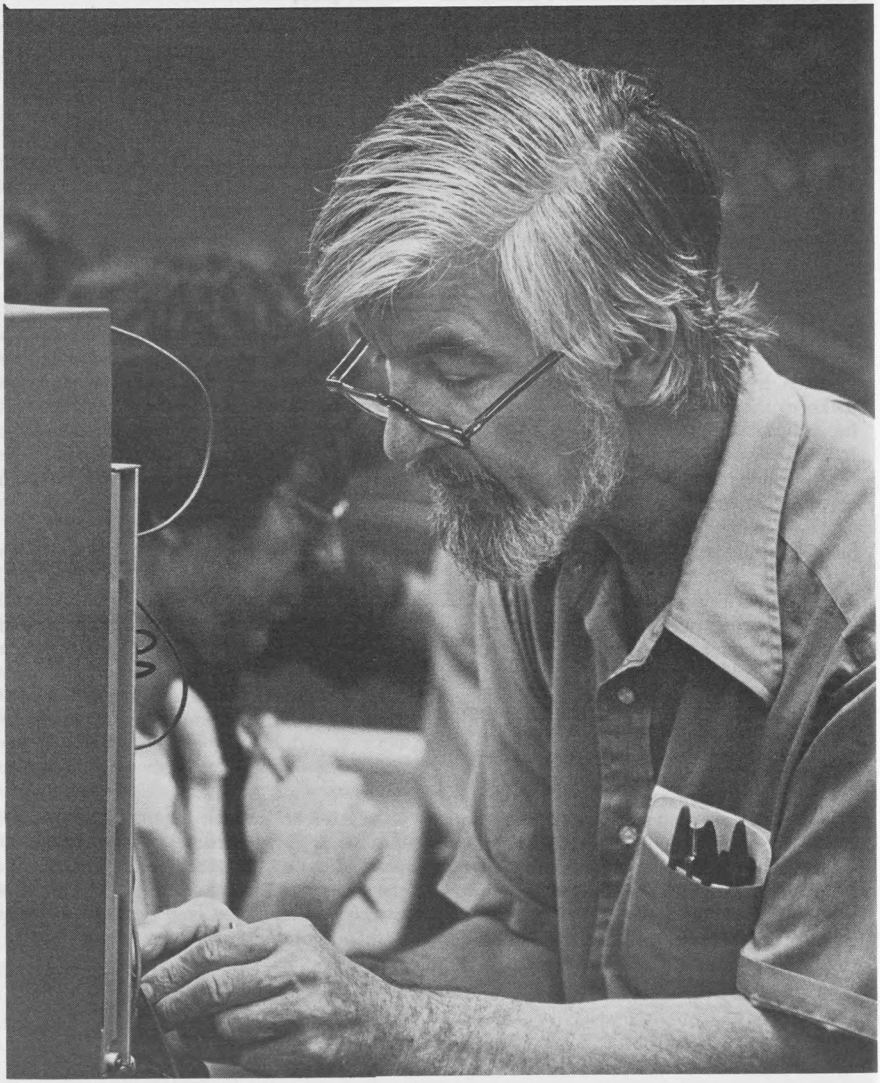
Fraternities

There are three fraternities at Swarthmore; Delta Upsilon and Phi Sigma Kappa are affiliated with national organizations, while Phi Alpha Psi is a local association. Fraternities are adjuncts to the college social program and maintain separate lodges on the campus. The lodges do not contain dormitory accommodations or eating facilities. New members are pledged during the late fall of their first year at the College. In recent years about ten per cent of the freshman men have decided to affiliate with one of the fraternities.

IV

Educational Program
Faculty Regulations
Degree Requirements

Awards and Prizes
Fellowships



Educational Program

GENERAL STATEMENT

Swarthmore College offers the degree of Bachelor of Arts and the degree of Bachelor of Science. The latter is given only to students who major in Engineering; the former, to students in the Humanities, the Social Sciences, and the Natural Sciences.* Four years of resident study are normally required for a Bachelor's degree (see page 54), but variation in this term, particularly as a result of Advanced Placement credit, is possible (see page 17).

The selection of a program will depend upon the student's interests and vocational plans. The purpose of a liberal education, however, is not primarily to provide vocational instruction, even though it provides the best foundation for one's future vocation. Its purpose is to help students fulfill their responsibilities as citizens and grow into cultivated and versatile individuals. A liberal education is concerned with our cultural inheritance, with the cultivation of aesthetic, moral, and spiritual values, with the development of analytical abilities. Intellectually it aims to enhance resourcefulness, serious curiosity, open-mindedness, perspective, logical coherence, insight, discrimination.

One comprehensive review of Swarthmore's curriculum *(Critique of a College,* 1967) suggested two principles for a liberal education. "One is the principle of Depth. To make the most of a liberal education, each student must go far enough into some subjects to give him a genuine mastery of disciplinary skills, so that he can use them to generate new discoveries on his own . . . He must go far enough to grasp systematic connections within a field, to see how fundamental principles combine to make intelligible a range of subordinate principles or phenomena . . . The other principle is that of Diversity. To make the most of a liberal education, each student must have enough breadth and variety in his studies so that he can compare and contrast different methods of inquiry . . ., and so that he can have the experience of making the bright spark of connection leap across wide gaps. It is this breadth that gives point to the two senses of 'relevance' that are fundamental in liberal education . . . perception of the relevance of one part of learning to another, even across the boundaries of fields and subjects (and) . . . perception of the relevance of learning to the exigencies of life . . ." To these two principles the study added that the curriculum should aim to encourage resourcefulness and self-reliance and develop the personal conditions of intellectual progress by placing substantial responsibility upon the student for his or her education, amply allowing individuality of programs and requiring important choices about the composition of programs. "What we are proposing," the study concluded, "is a curriculum that leans rather sharply toward specialized diversity, and away from uniform generality . . . Our emphasis is on serious encounters with special topics and problems at a comparatively high level of competence, and on student programs that reflect individual constellations of diversified interests."

Accordingly, the Swarthmore curriculum requires of the student both a diversity of intellectual experience sufficient to test and develop different capacities and perspectives and concentration on some field(s) sufficiently intensive to develop a serious understanding of problems and methods and a sense of the conditions of mastery. These ends of a liberal education are reflected in requirements for distribution and for the major.

All students during the first half of their college program are expected to satisfy some if not all of the distribution requirements, to choose their major and minor subjects, and to prepare for advanced work in these subjects by taking certain prerequisites. The normal program consists of four courses each semester chosen by the student in consultation with his or her faculty advisor.

The program for upper class students affords a choice between two methods of study: the External Examination (Honors) Program and the Course program. Reading for Honors is

* For groupings of departments see page 209.

characteristically the more intensive, Course work the more diversified. An Honors candidate concentrates on two or three fields, the major and one or more minors; studies are intensive and will occupy three-fourths of the student's working time during the last two years. In addition, the student takes four courses, or the equivalent, which provide opportunities for further exploration outside the Honors program. At the close of the senior year, the Honors candidate takes a series of six examinations given by visiting examiners.

A student in the Course program has wider freedom of election and normally takes four courses or their equivalent in each of the last four semesters. Before the end of the senior year, students are required to pass a comprehensive examination given by the major department. Students in the Course program are admitted to seminars when space is available; but work in colloquia as well as independent work is part of the Course program.

The program for engineering students follows a similar basic plan, with certain variations which are explained on page 127, Courses outside the technical fields are distributed over all four years.

The course advisors of freshmen and sophomores are members of the faculty appointed by the Dean. For juniors and seniors the advisors are the chairmen of their major departments or their representatives.

PROGRAM FOR FRESHMEN AND SOPHOMORES

The curriculum of the first two years introduces a student to the content and methods of a variety of fields important to a liberal education. The College distribution requirements are designed to lead the student into serious work in several different, important, and broadly characteristic kinds of intellectual activity without insisting on a specific or narrow classification of knowledge and inquiry.

To meet these distribution requirements a student must take at least two courses in each of the four subject-matter groups listed below, elect work in at least six departments, and complete at least 20 credits outside the major before graduation. Three of the four distribution groups (those dealing with the natural sciences and engineering, literature and the arts, and the social and policy sciences) correspond generally to the College's grouping of academic departments in three divisions; a fourth group comprises subjects especially relevant to more than one division. Mathematics, though not included in the four groups, may be counted as one of the six departments in which work should be elected. Other courses which will not fulfill a distribution requirement (e.g. courses taught jointly by members of different departments, courses in education, elementary language courses) may not be counted as one of the six departments.

The distribution requirements are reviewed and revised from time to time by the Curriculum Committee and the Faculty as perspectives of disciplines and of departments change and in recognition of the pluralism of intellectual work.

The four groups for the distribution requirement at present are:

1. Astronomy, Biology, Chemistry, Engineering, Physics.
2. Art (courses in art history), Classics (literature courses numbered 11 or above), English Literature (with the exception of English 1A and 1B and workshop and studio courses), Modern Languages (literature courses numbered 11 or above), Music (except courses numbered 33-40 and Dance 1-10 and 30).
3. Classics (courses in ancient history), History, Linguistics, Philosophy, Psychology, Religion.
4. Economics (Economics 3, 4, 44), Political Science, Sociology and Anthropology.

Courses taught jointly or alternately by faculty members of departments in different distribution groups may not be used to satisfy distribution requirements; and courses cross-listed between departments in two groups

fulfill the distribution requirement only for the group in which the offering department belongs.

Students entering college with special preparation in any of the subjects included in the distribution requirements may apply to the Committee on Academic Requirements for exemption from that requirement, but secondary school courses of an advanced level do not usually provide grounds for such exemption.

It is most desirable that students include in their programs some work in a foreign language. A student who intends to major in one of the natural sciences, mathematics, or engineering should take an appropriate mathematics course in the freshman year. Students intending to major in one of the social sciences should be aware of the increasing importance of mathematical background for these subjects.

In addition to the requirements listed above, prerequisites must be completed for the work of the last two years in major and minor subjects, and sufficient additional electives must be taken to make up a full program, bearing in mind the requirement that at least 20 credits must be taken outside the major department.

Early in the sophomore year, the student should identify two or three subjects as possible majors, paying particular attention to departmental requirements and recommendations.

While faculty advisors assist students in preparing their academic programs, it is emphasized that students themselves are individually responsible for planning and adhering to programs and for the completion for graduation requirements. Faculty advisors, department chairmen, other faculty members, the Deans, the Associate Provost and the Registrar are available for information and advice.

In the freshman and sophomore years all students not excused for medical reasons are required to complete a four quarter (two semester) program in physical education. The requirements are stated in full on page 52.

COURSE PROGRAM FOR JUNIORS AND SENIORS

The work of juniors and seniors in the Course program includes some intensive, specialized study within a general area of interest. This comprises enough work in a single department (designated as a "major") to make an equivalent of at least eight courses before graduation. There is no upper limit to the number of courses a student may take in the major field, provided that at least twenty credits be taken outside the major field. It has been the practice of the Committee on Academic Requirements to review cases in which this rule is alleged to create a special hardship. Before graduation the student must pass a comprehensive examination in his or her major subject.

Students must determine a major subject by the end of their sophomore year, and apply formally through the Registrar to be accepted by the department or division concerned. Acceptance will be based upon the student's record and an estimate of his or her capabilities in the designated major. Students who fail to secure approval of a major cannot be admitted to the junior class.

With departmental permission it is possible for a student to plan a Special Major that includes closely related work in one or more departments outside the major department. This work (up to four courses normally) is part of the major program for the comprehensive examination; some of it may consist of a thesis or other written research project(s) designed to integrate the work across departmental boundaries. In any case, the program of the Special Major is expected to be integral in the sense that it specifies a field of learning (not necessarily conventional) or topic or problems for sustained inquiry that crosses departmental boundaries and can be treated as a sub-field within the normal departmental major. Special Majors consist of at least 10 credits and normally of no more than 12 credits. Occasionally, where regular departmental requirements unduly constrain the

possibilities of a Special Major, these requirements may be relaxed to a minimum of six courses in the primary department or by the omission of certain courses in that department normally required for the sake of breadth of experience of the major field; but course requirements central to systematic understanding of the major field will not be waived. By extension, Special Majors may be formulated as joint majors between two departments, normally with at least five credits in each department and 11 in both departments, which, in such programs, collaborate in advising and in the comprehensive examination.

During the junior and senior years, Course students are advised by the chairman of the major department (or a member of the department designated by the chairman) whose approval must be secured for the choice of courses each semester.

The faculty may award the bachelor's degree with Distinction to students who have done distinguished work in the Course program and have achieved the grade average established for this degree.

EXTERNAL EXAMINATION PROGRAM (READING FOR HONORS) FOR JUNIORS AND SENIORS

The External Examination Program, initiated in 1922 by President Frank Aydelotte and modified most recently in 1977, is a distinctive part of Swarthmore's educational life. While the program is designedly flexible and responsive to new needs, it has been characterized from the beginning by three basic elements, which taken together may be said to be the essence of the system.

(1) Reading for Honors involves a concentration of the student's attention during the junior and senior year upon a limited field of studies. Normally, the student pursues only two subjects each semester, avoiding fragmentation of interests. Content of studies is correspondingly broader and deeper, permitting a wide range of reading and investigation and demanding of the student correlations of an independent and searching nature.

(2) While Reading for Honors frees students from periodic examination, it exposes their thinking to continual scrutiny from both classmates and instructors. In this program, students are prepared for examinations in six subjects, given at the close of the senior year. In these, the student is expected to demonstrate competence in a field of knowledge rather than mere mastery of those facts and interpretations which the instructor has presented. These examinations, consisting of a three-hour paper in each field, are set by examiners from other institutions who also come to the campus to conduct an oral examination of each student.

(3) Reading for Honors is customarily carried on in seminars, in independent projects, or in classes which have been approved as preparations for Honors. Seminars meet once a week, in many cases in the home of the instructor, for sessions lasting three hours or more. The exact technique of the seminar varies with the subject matter, but its essence is a cooperative search for truth, whether it be by papers, discussion, or laboratory experiment. While students preparing for Honors examinations may under unusual circumstances elect to take as many as eight seminars, an Honors candidate will usually take no more than six seminars; if over six are taken, those six which constitute commitment to be considered for Honors must be designated at the time of entry into the External Examination program. Fewer than six may be taken, since it is possible to prepare in other ways for Honors examinations.

In practice three avenues toward an Honors degree are open:

(1) The normal program of reading for Honors consists of six subjects studied during the last two years in preparation for papers, i.e., examinations, given by the visiting examiners at the close of the senior year. The usual pattern is four papers in the major department and two in a minor department, but other combinations of major and minor fields are possible. No student is allowed more than four papers in the major; in those cases where three subjects are offered in each of two

fields, one of them is designated as the major. While there is a general belief that two papers in a minor field are desirable because of the mutual reinforcement they provide, there are by custom certain subjects which are allowed to stand alone. Thus there is a considerable flexibility in Honors programs, each being subject to the scrutiny of the departments and divisions in which the work is done.

(2) Students who have a special reason to study for one or two semesters abroad or in another American institution must take the normal number of examinations. Such programs must be worked out in advance, since it may not be possible to provide special visiting examiners for work taken elsewhere and since instruction in some fields of the student's choice may not be available in the other institution. In general the student following this avenue to an Honors degree should weigh carefully the advantage of working independently or under tutorial guidance against the loss incurred by missing both the stimulus and criticism provided in seminar.

(3) Students who at the end of the sophomore year did not elect or were not permitted to read for Honors, but whose work has subsequently shown distinction, may be encouraged to enter the External Examination program as late as the middle of the senior year. They shall receive no remission of the number of examinations by reason of their preparation in the Course program. Such students must petition the division before the beginning of the second semester of the senior year for permission to take the Honors examinations and must submit an acceptable list of examinations which they are prepared to take.

A candidate for admission to the External Examination program should consult the chairmen of his or her prospective major and minor departments during the second semester of the sophomore year and work out a program for the junior and senior years. This proposed program must be filed in the office of the Registrar who will forward it to the divisions concerned. The acceptance of the candidate by the divisions depends in part upon the quality of the student's previous work as indicated by the grades received but mainly upon the student's apparent capacity for assuming the responsibility of reading for Honors. The major department is responsible for the original plan of work and for keeping in touch with the candidate's progress from semester to semester. The division is responsible for approval of the original program and of any later changes in that program.

At the end of the junior year, Honors candidates are required to take the Honors examinations set at that time for the fields they have studied. These trial papers are read by Swarthmore instructors, not by the visiting examiners. On the basis of the showing made in these examinations, the student may be advised or required to drop out of the External Examination program. Those students who move to the Course program under these circumstances or for other reasons will receive grades for the work accomplished while reading for Honors, but in no case without taking examinations in the field covered.

At the end of the senior year the reading of the examinations and the decision of the degree of Honors to be awarded the candidates is entirely in the hands of the visiting examiners. Upon their recommendation, successful candidates are awarded the Bachelor's Degree with Honors, with High Honors, or with Highest Honors. When the work of a candidate does not in the opinion of the examiners merit Honors of any grade, Swarthmore faculty review the student's examination papers and determine whether or not to grant a degree in the Course program.

EXCEPTIONS TO THE FOUR YEAR PROGRAM

Although the normal period of uninterrupted work toward the Bachelor of Arts and Bachelor of Science degrees is four years, graduation in three years is freely permitted when a student can take advantage of

Advanced Placement credits, perhaps combining them with extra work by special permission. When circumstances warrant, a student may lengthen the continuous route to graduation to five years by carrying fewer courses than the norm of four: this may be appropriate for students who enter Swarthmore lacking some elements of the usual preparation for college, who are physically handicapped, or who wish to free time for activities relating to their curricular work although not done for academic credit. Such five-year programs are possible in Music and Studio Arts for students who are taking instruction off campus or who wish to pursue studio or instrumental work without full credit but with instruction and critical supervision; but such programs in the arts are possible only on application to and selection by the department concerned, which will look for exceptional accomplishment or promise. In all cases where it is proposed to reduce academic credit and lengthen the period before graduation the College looks particularly to personal circumstances and to careful advising and necessarily charges the regular annual tuition (see the provisions for overloads, p. 18). Full-time leaves of absence for a semester or a year or more are freely permitted and in some cases encouraged, subject also to careful planning and academic advising.

NORMAL COURSE LOAD

Although normal progress toward the degree of Bachelor of Arts or Bachelor of Science is made by eight semesters' work of four courses or the equivalent each semester, students may and frequently do vary this by programs of five courses or three courses if it is desirable for them to do so. The object of progress toward the degree is not primarily, however, the accumulation of 32 credits. College policy does not permit programs of fewer than three courses within the normal 8 semester enrollment. Programs of more than five courses or fewer than four courses require special permission (see p. 18 on tuition and p. 51 on registration).

FORMATS OF INSTRUCTION

While classes and seminars are the normal curricular formats at Swarthmore, faculty regulations encourage other modes as well. These include various forms of individual study, student-run courses, and a limited amount of "practical" or off-campus work.

The principal forms of individual work are attachments to courses, directed reading, and tutorials. The faculty regulation on attachments provides that a student may attach to an existing course, with permission of the instructor, a project of additional reading, research, and writing. If this attachment is taken concurrently with the course it is normally done for half credit. If it is taken in a later semester (preferably the semester immediately following) it may be done for either half or full credit. This kind of work can be done on either a small-group or individual basis. It is not possible in all courses, but it is in most, including some introductory courses. For freshmen and sophomores it is a way of developing capacities for independent work, and for Honors candidates it is an alternative to seminars as a preparation for papers. Students who decide before the middle of the semester to do a half-credit attachment may commonly, with permission, drop a regular course and carry three and a half credits in that term to be balanced by four and a half credits in another term. Students may do as many as two attachments each year.

Directed reading and tutorials are similar; but the faculty role in the former is more bibliographical than pedagogical, and, because they require somewhat less faculty time, opportunities for directed reading are more frequent in most departments than are opportunities for tutorials. In both cases substantial written work and/or written

examinations are considered appropriate, and it is generally desirable that the work be more specialized or more sharply focussed than is usually the case in courses or seminars; the work may range from a course of reading to a specific research project. Such work is available primarily to juniors and seniors in accordance with their curricular interests and as faculty time permits.

The faculty regulation on student-run courses permits "a group of students to propose a topic to an instructor for half or single credit and to run their own course with a reading list approved by the instructor and a final examination or equivalent administered by him, but normally with no further involvement of faculty." In organizing such a course students obtain provisional approval and agreement to serve as course supervisor from a faculty member by December 1st (for the spring term) or May 1st (for the fall term) on the basis of an initial memorandum emphasizing the principal subject matter to be studied, the questions to be asked about it, the methods of investigation, and providing a preliminary bibliography. The course is then registered by its organizers with the Provost, who has administrative supervision of such work, and who may waive the foregoing deadlines to recognize problems in the organization of such courses. The course supervisor consults his or her department, and in the case of an interdepartmental course, any other department concerned, whose representatives together with the Provost will decide whether to approve the course. The supervisor also reviews the course outline and bibliography and qualifications and general eligibility of students proposing to participate in the course. After a student-run course has been found acceptable by the appropriate department (or departments) and the Provost, the course supervisor's final approval is due ten days before the term begins, following which a revised reading list and class list are given to the Librarian and the course title and class list are filed with the Registrar. At the end of the course the supervisor evaluates and grades the students' work or arranges for an outside examiner to do so.

Student-run courses may vary in format and content. In particular, they may be provisionally proposed for half credit to run in the first half of the semester, and at mid-term, may be either concluded or, if the participants and course supervisor find the work profitable, continued for the balance of the term for full credit. Alternatively, student-run courses may be started after the beginning of the semester (up to mid-semester) for half credit and then be continued, on the same basis, into the following term. Or they may be taken for half credit over a full term. The role of the course supervisor may exceed that in planning and evaluation outlined above and extend to occasional or regular participation. The only essentials, and the purpose of the procedures, are sufficient planning and organization of the course to facilitate focus and penetration. The course planning and organization, both analytical and bibliographical, are also regarded as important ends in themselves, to be emphasized in the review of proposals before approval. Up to four of the 32 credits required for graduation may be taken in student-run courses.

Finally, as to applied or practical work, the College may under faculty regulations grant up to one course credit for practical work, which may be done off campus, when it can be shown to lend itself to intellectual analysis and is likely to contribute to a student's progress in regular course work, and subject to four conditions: (1) agreement of an instructor to supervise the project; (2) sponsorship by the instructor's department, and in the case of an interdisciplinary project, any other department concerned, whose representatives together with the Provost will decide whether to grant permission for the applied or practical work before that work is undertaken; (3) a basis for the project in some prior course work; and (4) normally, the examination of pertinent literature and production of a written report as parts of the project. This option is intended to apply to work in which direct experience of the off-campus world or responsible applications of academic learning or imaginative aspects of the practice of an art are the primary elements. Because such work is likely to bear a loose relation to organized instruction and the regular curriculum, the College limits academic credit for it while recognizing its special importance for some students' programs.

INTERDISCIPLINARY WORK

The requirements of the major typically leave room for significant flexibility in students' programs, both within and outside the major. This may be used to pursue a variety of interests and to emphasize intellectual diversity; it may also be used for the practical integration of individual programs around interests or principles supplementing the major. The College offers interdepartmental majors in International Relations, Medieval Studies, Literature, and Linguistics-Psychology, and formal interdisciplinary programs short of the major in Asian Studies, Black Studies, and Public Policy. The programs in Education and in Linguistics have departmental status as to staff. It should be recognized that some departments are themselves interdisciplinary in nature; that a considerable number of courses are cross-listed between departments; that each year some courses are taught jointly by members of two or more departments; that departments commonly recommend or require supporting work for their major in other departments; and that students can organize their work into personally selected concentrations in addition to or as extensions of their majors, particularly in Special Majors. Such concentration is formally provided in Black Studies, Asian Studies, and Public Policy. Many other opportunities exist informally — e.g., in comparative literature, in African studies, in American studies, in Religion and Sociology-Anthropology, in Engineering and Social Sciences, or in Biology and Chemistry. Students are encouraged to seek the advice of faculty members on such possibilities with respect to their particular interests. In some cases faculty members of several departments have planned and scheduled their course offerings with some consultation so as to afford a de facto concentration in addition to the major, and students may wish to know and take advantage of these cases of overlapping faculty interests.

HEALTH SCIENCES ADVISORY PROGRAM

The function of the health sciences advisory program is twofold: to advise students interested in a career in the health sciences, and to prepare letters of recommendation for professional schools to which students apply. The letters are based on faculty evaluations requested by the student, the student's academic record and non-academic activities.

Students intending to enter a career in the health sciences, especially those applying to medical or dental schools, should plan their academic programs carefully to meet the necessary requirements, as well as the general College requirements. The following courses are among the *minimum* requirements for students entering medical or dental schools: Biology 1, 2; Chemistry 1, 2, and 28, 29; Physics 1, 2, or 3, 4; Math 3, 4, or two higher level courses; and English Literature, two semester courses. In addition to the minimal requirements, some medical schools require and many recommend the following courses: Cell Biology, Developmental Biology, Genetics, and one year of calculus. However, the student should bear in mind that requirements change, and should remain in touch with those professional schools in which he or she is interested. The work of the junior and senior years may be completed in either the Course or the Honors Program, and in any major department of the student's choice. However, professional schools in the health sciences generally require a demonstrated proficiency in the basic sciences. All required courses should therefore be taken on a graded basis after the first semester of the freshman year.

Almost all medical schools require applicants to take the New Medical College Admission Test which is given in April and September each year. It is recommended that students take the test in the Spring of the year that they apply for admission to medical schools. The *Student Manual for the New* MCAT should be reviewed as early as practical and may be purchased in the College bookstore. Swarthmore College is a testing center for the New MCAT. Corollary tests, the Dental Aptitude

Test and the Veterinary Aptitude Test, are often required by dental and veterinary schools.

Specific requirements for each medical and dental school along with much other useful information are given in two publications which are available in the College bookstore or the Health Sciences Advisory Office: *Medical School Admission Requirements* and *Admission Requirements of American Dental Schools.* Catalogs for most medical and veterinary schools are also on file in the Advisory Office.

The Health Sciences Advisor meets periodically with students interested in health careers and is available to assist students in planning their programs in cooperation with students' own academic advisors. Further information on opportunities, requirements and procedures can be obtained from the Health Sciences Advisor but it is the student's responsibility to make his or her intentions known to the Advisor at the earliest possible date.

CREATIVE ARTS

Work in the creative arts is available both in the curriculum of certain departments and on an extra-curricular basis. Interested students should consult the departmental statements in Art, English Literature, and Music. A total of not more than five courses in the creative arts may be counted toward the degrees of Bachelor of Arts and Bachelor of Science.

COOPERATION WITH NEIGHBORING INSTITUTIONS

With the approval of their faculty advisor and the Associate Provost, students may take courses offered by Bryn Mawr or Haverford College or the University of Pennsylvania without the payment of extra tuition. This arrangement does not apply to the summer session of the University of Pennsylvania.

STUDENT EXCHANGE PROGRAMS

To provide variety and a broadened outlook for interested students, the College has student exchange arrangements with Middlebury College, Mills College, Pomona College, Rice University, and Tufts University. Selection is made by a committee of the home institution from among applicants who will be sophomores or juniors at the time of the exchange. With each institution there is a limited and matched number of exchanges. Students settle financially with the home institution, thus retaining during the exchange any financial aid for which they are eligible. Exchange arrangements do not permit transfer of participants to the institution with which the exchange takes place.

EDUCATION ABROAD

The College recognizes the general educational value of travel and study abroad and cooperates as far as possible in enabling interested students to take advantage of such opportunities. It distinguishes, however, between those foreign study plans which may be taken for credit as part of a Swarthmore educational program, and those which must be regarded as supplementary. To be acceptable for credit, foreign study must meet Swarthmore academic standards, and must form a coherent part of the student's four-year plan of study.

The External Examination (Honors) Program in particular demands a concentration of study which is not easily adapted to the very different educational systems of foreign universities. Therefore, while some of the approved programs listed below may normally be taken as substitutes for a semester or a year of work at Swarthmore, each case is judged individually, and the College may withhold its approval of a particular program, or may insist that the program be carried out as an extra college year.

Plans for study abroad must be approved in advance by the Associate Provost, the Registrar, and the chairmen of departments concerned, if credit is to be given for courses taken. Students may be asked to take examinations upon their return to the College. Requests for credit must be made within the academic year following return to Swarthmore. Individual departments, such as Art and Modern Languages and Literatures, publish separate instructions for transfer of credits from other institutions. These are available from the respective department offices.

1. *The Swarthmore Program in Grenoble, France,* inaugurated in the fall of 1972. Students entering this program spend either one or two semesters at the University of Grenoble, where their course of study is the equivalent of one or two semesters at Swarthmore. This program, under the auspices of the Department of Modern Languages and Literatures, is open to students from any department, but especially those in the humanities and social sciences. Should there be places available, applications from students at other institutions are accepted. The number of participants in limited to twenty-five.

Students are integrated into the academic life at the University of Grenoble through regular courses, when their language competence allows, or through special courses for foreign students. Individual programs are arranged to suit the needs and competencies of students. Preparation of Honors papers is possible in certain fields. The program is designed primarily for juniors and second semester sophomores, but seniors can be accommodated in special cases.

A member of the Department of Modern Languages and Literatures acts as resident Director. The Director teaches a course or a seminar, supervises the academic program and the living arrrangements of the students, and advises on all educational or personal problems. A co-ordinator of the program at Swarthmore handles such matters as admissions to the program (in consultation with the Deans), financial aid, transfer of academic credit to departments within the College and to institutions whose students participate in the program. Applications for the fall semester must be submitted by March 15 and for the spring semester by November 1.

2. *Academic Year in Madrid, Spain.* This program is administered by the Romance Language Department of Hamilton College, in co-operation with faculty members of Williams, Mount Holyoke and Swarthmore Colleges. Students many enroll either for the full academic year or for the fall semester only. The program attempts to take full advantage of the best facilities and teaching staff of the Spanish community, while adhering to the code of intellectual performance characteristic of the most demanding American institutions.

A distinguishing aspect of the program is the individual guidance provided students in non-academic areas, especially in (1) the efforts that are made to find homes well suited for student lodging, and (2) the activities which are planned to insure ample contact with Spanish students.

The program is based in Madrid, where the cultural, educational and geographic benefits are optimum. Classrooms and office space are located at the International Institute (Miguel Angel 8, Madrid). The Institute is centrally located, it houses a library eminently suited for study and research, and it sponsors a series of lectures, concerts and social activities.

The program is under the general guidance of a committee comprised of members of the Hamilton College Department of Romance Languages, who, in rotation with professors from Williams, Mount Holyoke and Swarthmore Colleges, serve also as directors-in-residence in Madrid.

Applications and further information are available from the Department of Modern Languages and Literatures.

3. *Other Swarthmore-supported Programs of Study Abroad.* Beginning in the academic year 1980-81 Swarthmore students may apply their scholarship monies to the cost of participating in one of the programs of academic study abroad listed below, subject to the student's acceptance to the program in question and the customary regulations which apply to study abroad as outlined above.

1) Swarthmore College Program in Grenoble (France) for either semester or the entire academic year;

2) Hamilton College Academic Year in Madrid (Spain) for the fall semester or the entire academic year;

3) Wayne State Junior Year in Germany, either at the University of Freiburg or the University of Munich (West Germany) for the entire academic year;

4) Smith College Junior Year at the University of Hamburg (West Germany) for the entire academic year;

5) Great Lakes College Association Latin America Program (Ceuca) in Bogotá (Colombia) for either semester or the entire academic year;

6) The Intercollegiate Center for Classical Studies in Rome (Italy) for either semester or the entire academic year.

Students who intend to apply scholarship funds to the above programs should consult with the Financial Aid officer of the College.

4. *Other Established Programs.* Students who wish to study abroad under formal academic conditions but whose needs would not be met by any of the programs listed under 1, 2, and 3 above may apply to one of the programs administered by other American colleges and universities; for example, those of Oberlin College, with whose Chinese Studies Program at Tunghai University the College is also affiliated, Smith College, or Sweet Briar College. These are full-year programs of study at foreign universities, under the supervision of American college personnel. Interested students should consult the Associate Provost.

5. *Direct Enrollment.* Application may also be made directly to foreign institutions for admission as a special student. This should be done only after consultation with the Associate Provost, the Registrar, and the appropriate department head. Care must be taken to assure in advance that courses taken abroad will be acceptable for Swarthmore credit. Most foreign universities severely limit the number of students they accept for short periods.

6. *Peaslee Scholarships.* These scholarships, the gift of Amos Peaslee (Class of '07), were instituted in 1953 and are normally awarded each year on the recommendation of the Department of Modern Languages and Literatures, preferably to sophomores and juniors, for academic studies centering on the languages and literatures taught in the Department. Scholarships are awarded for study in Europe, South America, and, under special circumstances, in other non-English speaking countries on the basis of the plan of study submitted by the applicant and the promise of academic distinction. The scholarships are for a minimum of one semester plus a summer; course credit is given for the work done upon approval of the department concerned. Applications are available from the Department of Modern Languages and Literatures. Applications for the spring semester and summer are due on or near November 1 of each year; for the summer and fall semester on or near April 1 of each year.

7. *The Olga Lamkert Memorial Fund.* Income from a fund established in 1979 by students of Olga Lamkert, Professor of Russian at Swarthmore College from 1949 to 1956, is available to students with demonstrated financial need who wish to attend a Russian summer school program in this country or either the Leningrad or Moscow semester programs in the USSR. Awards based on merit and financial need will be made on the recommendation of the Russian section of the Department of Modern Languages and Literatures.

8. *Intercollegiate Center for Classical Studies, Rome.* See announcement of the Art Department, p. 62, end of the Classics Department, p. 83.

Faculty Regulations

ATTENDANCE AT CLASSES

Registration to take a course for credit implies regular attendance at classes, unless a student specifically elects to obtain credit in a course without attending classes. The conditions for exercising this option are set forth below. With this exception, students are responsible for regular attendance. Faculty members will report to the Deans the name of any student whose repeated absence is in their opinion impairing the student's work. The number of cuts allowed in a given course is not specified, a fact which places a heavy responsibility on all students to make sure that their work is not suffering as a result of absences. Since freshmen must exercise particular care in this respect, and since the Faculty recognizes its greater responsibility toward freshmen in the matter of class attendance, it is expected that freshmen, especially, will attend *all* classes.

When illness necessitates absence from classes, the student should report at once to the nurses or to the college physician.

A student may obtain credit for a course without attending class meetings by reading the material prescribed by a syllabus and taking a final examination, under the following conditions:

1) The student must signify intent to do so at the time of registration, having obtained the instructor's approval in advance.

2) If after such registration the student wishes to resume normal class attendance, the instructor's approval must be obtained.

3) The student may be required to perform such work, in addition to the final examination, as the instructor deems necessary for adequate evaluation of his or her performance.

4) The final grade will be recorded by the Registrar exactly as if the student had attended classes normally.

GRADES

Instructors report to the Dean's and Registrar's offices at intervals during the year upon the work of students in courses. Informal reports during the semester take the form of comments on unsatisfactory work. At the end of each semester formal grades are given in each course under the letter system, by which *A* means excellent work, *B* good work, *C* satisfactory work, *D* passing but below the average required for graduation, and *NC* (no credit) for uncompleted or unsatisfactory work. Letter grades are qualified by pluses and minuses. *W* signifies that the student has been permitted to withdraw from the course by the Committee on Academic Requirements. *X* designates a condition; this means that a student has done unsatisfactory work in the first half of a year course, but by creditable work during the second half may earn a passing grade for the full course and thereby remove the condition. *R* is used to designate an auditor or to indicate cases in which the work of a foreign student cannot be evaluated because of deficiencies in English.

Inc. means that a student's work is incomplete with respect to specific assignments or examinations. The Faculty has voted that a student's final grade in a course should incorporate a zero for any part of the course not completed by the date of the final examination, or the end of the examination period. However, if circumstances beyond the student's control preclude the completion of the work by this date, a grade of *Incomplete (Inc.)* may be assigned with the permission of the Registrar. In such cases incomplete work must normally be made up and graded and the final grade recorded within five weeks after the start of the following term. Except by special permission of the Registrar (on consultation with the Committee on Academic Requirements) all grades of *Inc.* still outstanding after that date will be replaced on the student's permanent record by *NC* (no credit). Waiver of this provision by special permission shall in no case extend beyond one year from the time the *Inc.* grade was incurred.

The only grades recorded on students' records for courses taken during their first semester of the freshman year are *CR* (credit) and *NC* (no credit). In the balance of their work at Swarthmore, students may select up to four courses for Credit/No Credit by informing the Registrar's Office within the first two weeks of the term in which the course is taken. For freshmen and sophomores *CR* will be recorded for work that would earn a grade of *D* or higher; for juniors and seniors the minimum equivalent letter grade for *CR* will be *C*. Instructors are asked to provide the student and the faculty adviser with evaluation of the student's Credit/No Credit work. The evaluation for first-semester freshmen includes a letter-grade equivalent; for other students the evaluation may be either a letter-grade equivalent, or a comment. Such evaluations are not a part of the student's grade record. Letter grade equivalents only, for first semester freshmen courses only, may be provided to other institutions if requested by the student and absolutely required by the other institution.

Reports of grades are sent to students at the end of each semester. They are not routinely sent to parents or guardians, but such information may be released when students request it.

A C (2.0) average is required in the courses counted for graduation.

REGISTRATION

All students are required to register and enroll at the time specified in official announcements and to file programs of courses or seminars approved by their faculty advisors. Fines are imposed for late or incomplete registration or enrollment.

A regular student is expected to take the prescribed number of courses in each semester. If more than five or fewer than four courses seem desirable, the faculty advisor should be consulted and a petition filed with the Committee on Academic Requirements.

Applications involving late entrance into a course must be received within the first two weeks of the semester. Applications involving withdrawal from a course must be received not later than the middle of the semester, or the mid-point of the course if it meets for only one-half a semester.

A deposit of $100 is required of all returning students prior to their registration in both the spring and fall semesters. This deposit is applied to charges for the semester, and is not refundable.

EXAMINATIONS

Any student who is absent from an examination, announcement of which was made in advance, shall be given an examination at another hour only by special arrangement with the instructor in charge of the course.

No examination in absentia shall be permitted. This rule shall be interpreted to mean that instructors shall give examinations only at the College and under direct departmental supervision.

ACADEMIC HONESTY

Members of an academic community have an unequivocal responsibility to present as the result of their own work only that which is truly theirs. Cheating, whether in examinations or by plagiarizing the work of others, is a most serious offense, and one which strikes at the foundations of academic life.

The reponsibility of the Faculty in this area is three-fold: to explain the nature of the

problem to those they teach, to minimize temptation and to report any case of cheating to the Dean for action by the College Judiciary Committee.

The College Judiciary Committee will consider the case, determine guilt, and recommend a penalty to the President. The order of magnitude of the penalty should reflect the seriousness of the transgression. It is the opinion of the Faculty that for the first offense failure in the course and, as appropriate, suspension for a semester or deprivation of the degree in that year is not unsuitable; for a second offense the penalty should normally be expulsion. A full description of College judicial procedure may be obtained from the office of the Dean.

STUDENT LEAVES OF ABSENCE

Student leaves of absence are freely permitted provided the request for leave is received by the date of enrollment and the student is in good standing. If a student has not enrolled and has not arranged for a leave of absence for the subsequent semester, it is assumed that he or she is withdrawing. Such students must apply to the Dean for re-admission in order to return to College after an interval. The purpose of this policy is to assist the College in planning its enrollments.

SUMMER SCHOOL WORK

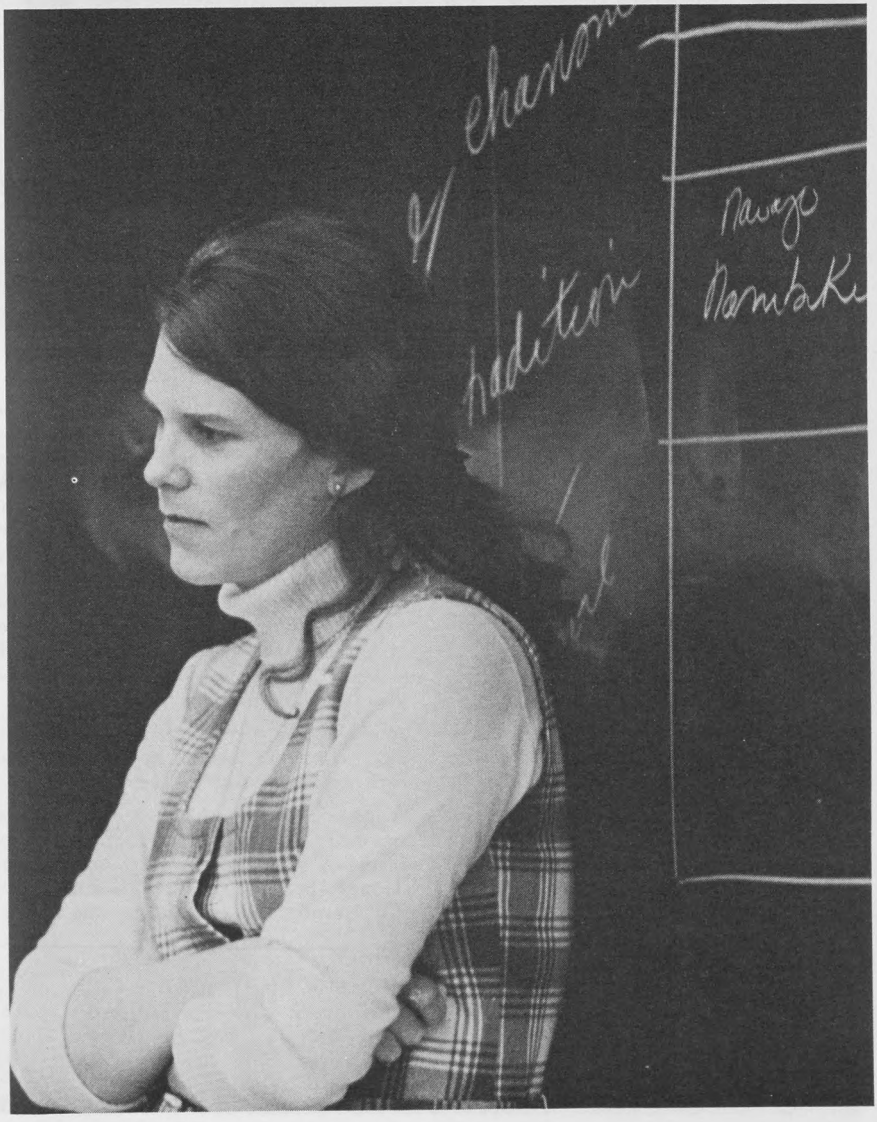
Students desiring to receive Swarthmore College credit for work at a summer school are required to obtain the approval of the chairman of the Swarthmore department concerned before doing the work. Prior approval is not automatic: it depends upon adequate information about the content and instruction of the work to be undertaken. Validation of the work for credit depends upon evaluation of the materials of the course including syllabus, reading lists, written papers, and examinations, by the Swarthmore department concerned after the work has been done. Validation may include an examination, written or oral, administered at Swarthmore. An official transcript from the summer school must be presented to the Office of the Registrar before the work can be validated for credit. Requests for credit must be made within the academic year following the term in which the course is taken. One course credit at Swarthmore is regarded as equivalent to 4 semester hours.

PHYSICAL EDUCATION

In the freshman and sophomore years all non-veteran students not excused for medical reasons are required to complete a four quarter (two semester) program in physical education. All students must pass a survival swimming test or take up to one quarter of swimming instruction. (See the departmental statement of the Department of Physical Education and Athletics.) Students who have not fulfilled their Physical Education requirement will not be allowed to enter their junior year.

EXCLUSION FROM COLLEGE

The College reserves the right to exclude at any time students whose academic standing it regards as unsatisfactory, and without assigning any further reason therefor; and neither the College nor any of its officers shall be under any liability whatsoever for such exclusion.



Degree Requirements

BACHELOR OF ARTS AND BACHELOR OF SCIENCE

The degree of Bachelor of Arts or Bachelor of Science is conferred upon students who have met the following requirements for graduation. The candidate must have:

1. Completed thirty-two courses or their equivalent.

2. An average grade of C in the courses counted for graduation.*

3. Complied with the distribution requirements and have completed at least twenty credits outside the major. (See page 40.)

4. Met the requirements in the major and supporting fields during the last two years.

5. Passed satisfactorily the comprehensive examinations in his or her major field, or met the standards set by visiting examiners for a degree with Honors.

6. Completed four semesters of study at Swarthmore College, two of which have been those of the senior year.

7. Completed the physical education requirement set forth on page 52 and in statements of the Department of Physical Education and Athletics.

8. Paid all outstanding bills and returned all equipment and library books.

MASTER OF ARTS AND MASTER OF SCIENCE

The degree of Master of Arts or Master of Science may be conferred subject to the following requirements:

Only students who have completed the work for the Bachelor's degree with some distinction, either at Swarthmore or at another institution of satisfactory standing, shall be admitted as candidates for the Master's degree at Swarthmore.

The candidate's record and a detailed program setting forth the aim of the work to be pursued shall be submitted, with a recommendation from the department or departments concerned, to the Curriculum Committee. If accepted by the Committee, the candidate's name shall be reported to the faculty at or before the first faculty meeting of the year in which the candidate is to begin work.

The requirements for the Master's degree shall include the equivalent of a full year's work of graduate character. This work may be done in courses, seminars, reading courses, regular conferences with members of the faculty, or research. The work may be done in one department or in two related departments.

A candidate for the Master's degree shall be required to pass an examination conducted by the department or departments in which the work was done. The candidate shall be examined by outside examiners, provided that where this procedure is not practicable, exceptions may be made by the Curriculum Committee. The department or departments concerned, on the basis of the reports of the outside examiners, together with the reports of the student's resident instructors, shall make recommendations to the faculty for the award of the degree.

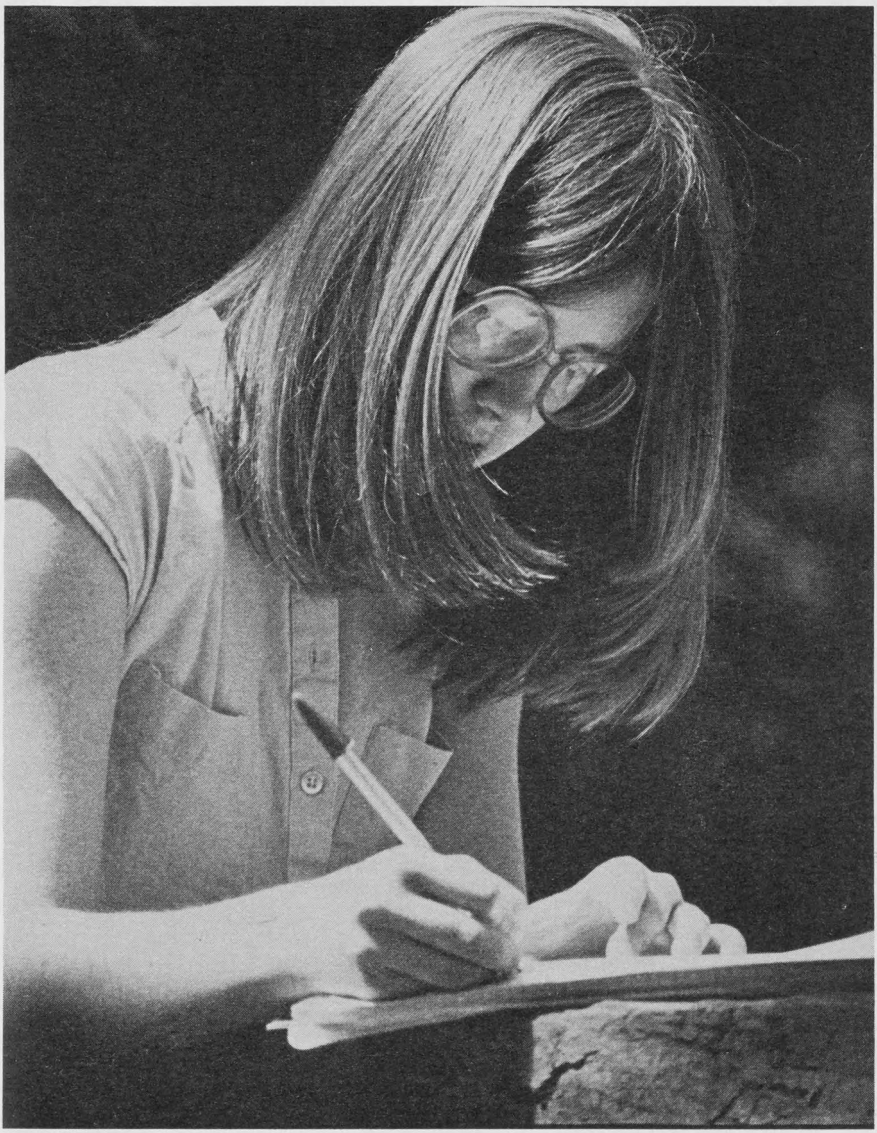
At the option of the department or departments concerned, a thesis may be required as part of the work for the degree.

A candidate for the Master's degree will be expected to show before admission to candidacy a competence in those languages deemed by his or her department or departments most essential for the field of

* "An average of C" is interpreted for this purpose as being a numerical average of at least 2.0 (A+, A = 4.0, A– = 3.67, B+ = 3.33, B = 3.0, B– = 2.67, C+ = 2.33, C = 2.0, C– = 1.67, D+ = 1.33, D = 1.0, D– = 0.67). Grades of Credit/No Credit and grades on the record for work not taken at Swarthmore College are not included in computing this average.

research. Detailed language requirements will be indicated in the announcements of departments which admit candidates for the degree.

The tuition fee for graduate students who are candidates for the Master's degree is $5,400 per year, and the general fee for these students is $50 per semester.



Awards and Prizes

The Ivy Award is made by the Faculty each year to the man of the graduating class who is outstanding in leadership, scholarship, and contributions to the College community.

The Oak Leaf Award is made by the Faculty each year to the woman of the graduating class who is outstanding in leadership, scholarship, and contributions to the College community.

The Scott Award at Swarthmore. A scholarship established by the Scott Paper Co. of Chester, Pa., in honor of its former president, Arthur Hoyt Scott of the Class of 1895. Given for the first time in 1953, it is awarded annually to an outstanding sophomore who plans to enter business after graduation and who demonstrates the qualities of scholarship, character, personality, leadership, and physical vigor. The award provides the recipient with $2,000 for each of his last two years in college, regardless of financial need.

The Flack Achievement Award, presented by the Flack Foundation, one of whose founders is Hertha Eisenmenger Flack of the Class of 1938, is made to a deserving student who, during the first two years at Swarthmore College, has demonstrated a good record of achievements in both academic and extracurricular activities while showing leadership potential as a constructive member of the College. The donor hopes these awards will go to students of demonstrated achievement and high potential who are dedicated to the basic principles of American democracy and of academic freedom. The awards are not related to need.

The Sarah Kaighn Cooper Scholarship, founded by Sallie K. Johnson in memory of her grandparents, Sarah Kaighn and Sarah Cooper, is awarded to the member of the Junior Class who is judged by the faculty to have had, since entering College, the best record for scholarship, character, and influence.

The McCabe Engineering Award, founded by Thomas B. McCabe, 1915, is presented each year to the outstanding engineering student in the Senior Class. The recipient is chosen by a committee of the faculty of the department of Engineering.

The Stanley Adamson Prize in Chemistry is endowed in memory of Stanley D. Adamson '65 by his parents, June and George Adamson. It is awarded each spring to a well-rounded Junior majoring in Chemistry who, in the opinion of the Department, gives promise of excellence and dedication in the field.

The Brand Blanshard Prize, honoring Brand Blanshard, Professor of Philosophy at Swarthmore from 1925 to 1945, has been established by David H. Scull, of the Class of 1936. The award of $100 is presented annually to the student who, in the opinion of the Department, submits the best essay on any philosophical topic.

The Heinrich W. Brinkmann Mathematics Prize, honoring Hienrich Brinkmann, Professor of Mathematics, 1933-1969, was established by his students in 1978 in honor of his 80th birthday. Two awards of $100 each are to be presented annually to a Course student and Honors candidate who, in the opinion of the Mathematics Department, have demonstrated excellence in Mathematics.

The Dorothy Ditter Gondos Award, bequeathed by Victor Gondos, Jr., in honor of his wife, Class of 1930, is given every other year to a student of Swarthmore College who, in the opinion of a faculty committee, submits the best paper on the subject dealing with a literature of a foreign language. The prize of about $100 is awarded in the spring semester. Awarding of the prize will be under the direction of the Literature Committee.

The Philip M. Hicks Prizes are endowed by friends of Philip M. Hicks, former Professor of English and Chairman of the Department of English Literature. One is awarded to the senior English major who in the opinion of the Department writes the best senior essay or thesis; one is awarded to the student who in the opinion of the Department submits the best critical essay on any topic in the field of literature.

The Jesse H. Holmes Prize in Religion of $100, donated by Eleanor S. Clarke of the Class of 1918 and named in honor of Jesse Holmes, Professor of History of Religion and Philosophy at Swarthmore from 1899 to 1934, is awarded to the student who, in the opinion of the Department of Religion, submits the best essay on any topic in the field of religion.

The Drew Pearson Prize of $100 is awarded by the editors of *The Phoenix* at the end of each academic year to a member of *The Phoenix* staff for excellence in journalism. The prize was established by the directors of The Drew Pearson Foundation in memory of Drew Pearson, Class of 1919.

The William Plumer Potter Public Speaking Fund, established in 1927, in addition to providing funds for the collection of recorded literature described on page 14, sponsors awards for the best student short stories, and is a major source of funds for campus appearances by poets and writers.

The Lois Morrell Poetry Award, given by her parents in memory of Lois Morrel of the Class of 1946, goes to that student who, in the opinion of the faculty, submits the best original poem in the annual competition for the award. The award of $100 is made in the spring of the year.

The John Russell Hayes Poetry Prizes are offered for the best original poem or for a translation from any language.

The Ella Frances Bunting Extemporary Speaking Fund and the *Owen Moon Fund* provide income for a poetry reading contest as well as funds for visiting poets and writers.

The Academy of American Poets awards $100 each year for the prize poem (or group of poems) submitted in a competition under the direction of the Department of English Literature.

The A. Edward Newton Library Prize of $50, endowed by A. Edward Newton, to make permanent the Library Prize first established by W.W. Thayer, is awarded annually to that undergraduate who, in the opinion of the Committee of Award, shows the best and most intelligently chosen collection of books upon any subject. Particular emphasis is laid not merely upon the size of the collection but also upon the skill with which the books are selected and upon the owner's knowledge of their subject-matter.

The Alice L. Crossley Prize in Asian Studies of $100 is awarded to the student who, in the opinion of the Asian Studies Committee, submits the best essay on any topic in Asian Studies.

FACULTY AWARD

The Flack Faculty Award is given for excellence in teaching and promise in scholarly activity to a member of the Swarthmore Faculty, to help meet the expenses of a full year of leave devoted to research and self-improvement. This award acknowledges the particularly strong link that exists at Swarthmore between teaching and original scholarly work. The award itself is to be made by the President upon the recommendation of the Provost and the candidate's academic department. This award is made possible by an endowment established by James M. Flack and Hertha Eisenmenger Flack '38.

Fellowships

Three fellowships (the *Leedom*, *Lippincott*, and *Lockwood* Fellowships — see below) are awarded annually by the Faculty, and two fellowships (the *Mott* and *Tyson* Fellowships — see below) are awarded by the Somerville Literary Society, to seniors or graduates of the College for the pursuit of advanced work. These awards are made on recommendation of the Committee on Fellowships and Prizes for a proposed program of study which has the approval of the Faculty. Applications must be in the hands of the Committee by March 31. The Committee considers applicants for all of these fellowships for which they are eligible and makes recommendations which overall do not discriminate on the basis of sex. These fellowships are:

The Hannah A. Leedom Fellowship founded by the bequest of Hannah A. Leedom.

The Joshua Lippincott Fellowship founded by Howard W. Lippincott, of the Class of 1875, in memory of his father.

The John Lockwood Memorial Fellowship, founded by the bequest of Lydia A. Lockwood, New York, in memory of her brother, John Lockwood. It was the wish of the donor that the fellowship be awarded to a member of the Society of Friends.

The Lucretia Mott Fellowship, founded by the Somerville Literary Society and sustained by the contributions of Swarthmore alumnae. It is awarded each year to a woman senior who is to pursue advanced study in an institution approved by the Committee.

The Martha E. Tyson Fellowship, founded by the Somerville Literary Society in 1913 and sustained by the contributions of Swarthmore alumnae. It is awarded each year to a woman senior or graduate who plans to enter elementary or secondary school work. The recipient of the award is to pursue a course of study in an institution approved by the Committee.

Four other fellowships are awarded under the conditions described below:

The Thomas B. McCabe, Jr. and Yvonne Motley McCabe Memorial Fellowship. This Fellowship, awarded annually to a graduate of the College, provides a grant toward the first year of study at the Harvard Business School. Yvonne and Thomas B. McCabe, Jr., were for a time residents of Cambridge, Massachusetts, and Mr. McCabe received the M.B.A. from Harvard and was a Visiting Lecturer there. In selecting the recipient, the Committee on Fellowships and Prizes follows the standards that determine the McCabe Achievement Awards, giving special consideration to applicants who have demonstrated superior qualities of leadership. Young alumni and graduating seniors are eligible to apply.

The J. Roland Pennock Undergraduate Fellowship in Public Affairs. The Fellowship, endowed by friends of Professor J. Roland Pennock at his retirement in 1976 and in recognition of his many years of distinguished teaching of Political Science at Swarthmore, provides a grant for as much as $2,500 to support a substantial research project (which could include inquiry through responsible participation) in public affairs. The Fellowship, for Swarthmore undergraduates, would normally be held off-campus during the summer. Preference is given to applicants from the Junior Class.

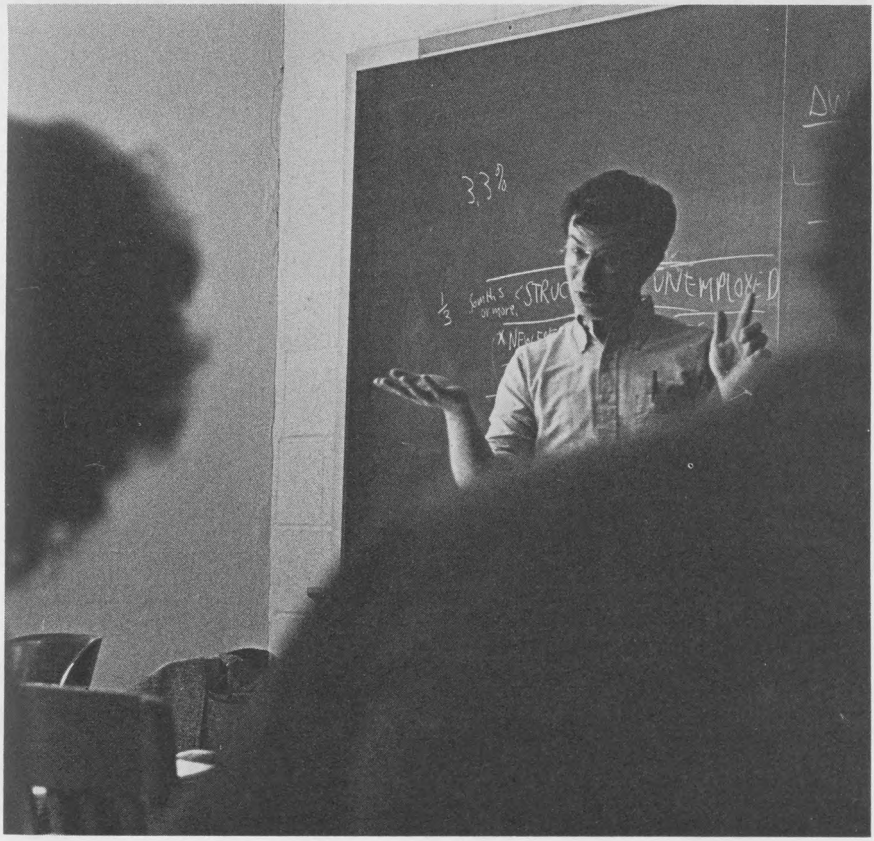
Susan P. Cobbs Prize Fellowship, established to honor the memory of Dean Emerita Susan P. Cobbs, is awarded at the discretion of the Classics Department to a student majoring in Classics for study in Greece or Italy.

Phi Beta Kappa Fellowship. The Swarthmore Chapter of Phi Beta Kappa (Epsilon of Pennsylvania) awards a Fellowship for graduate study to a senior who has been elected to Phi Beta Kappa and has been admitted to a program of advanced study in some branch of the liberal arts.

The Eugene M. Lang Graduate Incentive Fellowship. All Eugene M. Lang senior Scholars who have completed their Opportunity Project (see Financial Aid) and who have academic achievement at Swarthmore sufficient to earn Distinction or Honors may apply for these fellowships. Applicants should submit to the Committee on Fellowships and Prizes a plan of graduate study with high potential for service to society. This fellowship is made possible by the gift of Eugene M. Lang '38.

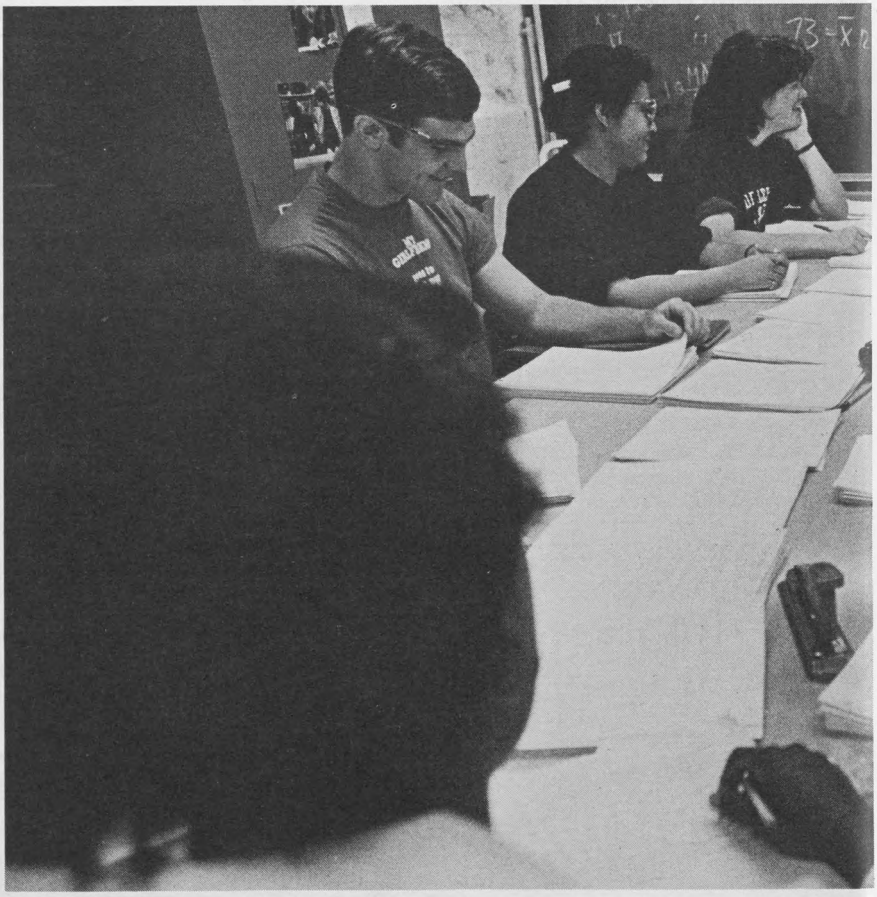
FACULTY FELLOWSHIP

The Eugene M. Lang Faculty Fellowship is designed to enhance the educational program of Swarthmore College by contributing to faculty development, by promoting original or innovative scholarly achievement of faculty members, and by encouraging the use of such achievements to stimulate intellectual exchange among scholars. The Fellowship will provide financial support for faculty leaves through a grant of about one half the recipient's salary during the grant year. Upon recommendation of the Selection Committee, there may be a small additional grant for travel and project expenses and for library book purchases. The Selection Committee shall consist of the Provost, three Divisional Chairmen, and three other persons selected by the President, of whom at least two must be Swarthmore alumni. Any faculty member eligible for leave may apply, and up to two may be chosen. Fellows will be expected to prepare a paper or papers resulting from the work of their leave year, presented publicly for the College and wider community. The Selection Committee may support wholly or in part the cost of publishing any of these papers. These fellowships are made possible by an endowment established by Eugene M. Lang '38.



V

Courses of Instruction



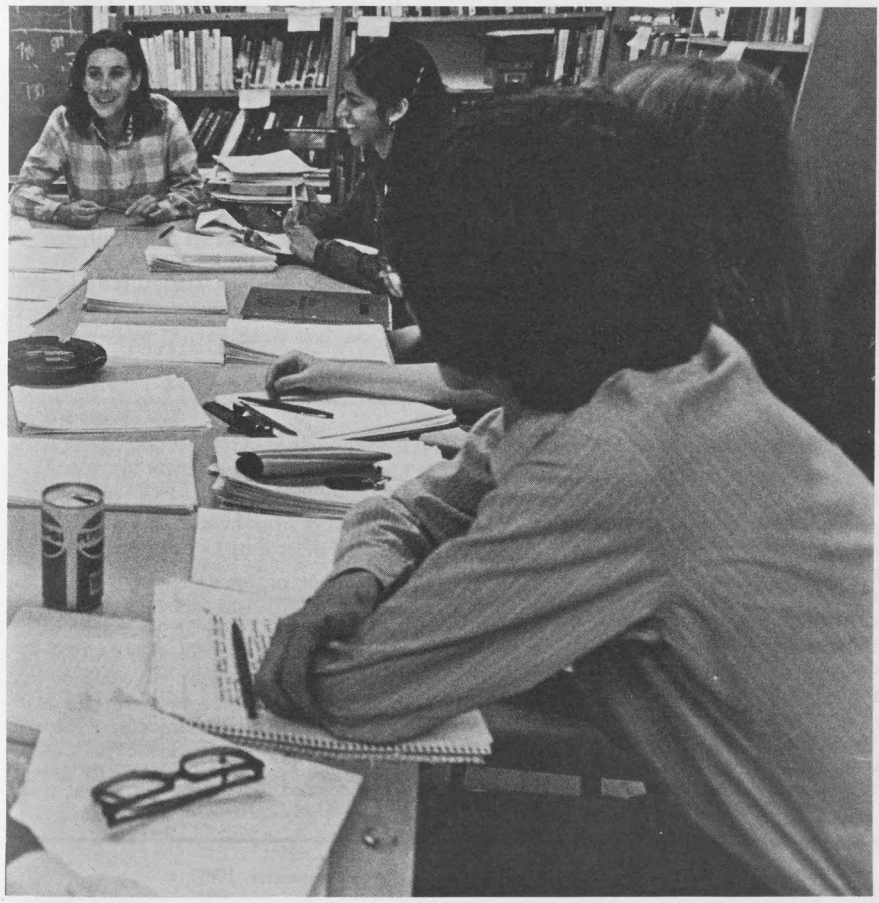
The course (semester course) is the unit of credit. Seminars and colloquia are usually given for double credit, i.e., equivalent to two courses. A few courses are given for half-course credit.

Courses are numbered as follows:

1	to 10	— introductory courses
11	to 99	— other courses (Some of these courses are not open to freshmen and sophomores.)
100	to 199	— seminars for Honors candidates and graduate students.

Year courses, the number of which are joined by a hyphen (e.g., 1-2) must be continued for the entire year; credit is not given for the first semester's work only, nor is credit given for the first semester if the student fails the second semester.

The course listings in this catalogue may be offered at the times indicated, and are intended to facilitate planning by representing probable offerings over a two year period. Those courses actually offered each semester are listed in the schedule of classes available before enrollment for that semester.



Art

T. KAORI KITAO, Professor and Chairperson
ALISON M. KETTERING, Associate Professor†
KIT-YIN TIENG SNYDER, Associate Professor (part-time)
MICHAEL COTHREN, Assistant Professor
CONSTANCE CAIN HUNGERFORD, Assistant Professor
MICHAEL KNUTSON, Assistant Professor
BRIAN A. MEUNIER, Instructor
SARAH PHELPS SMITH, Lecturer**

The Department of Art offers historical, critical, and practical instruction in the visual arts. Courses in art history consider questions having to do with the forms, traditions, meaning, and historical context of works of art and architecture; studio arts courses explore problems of methods, processes, and personal resources which arise in the actual creation of objects in various media.

Wilcox Gallery: The Florence Wilcox Art Gallery in Commons, Parrish Hall, provides seven to nine exhibitions a year, which are an integral part of the Studio Arts Program. The works of nationally known artists as well as those of younger artists, in various media, are exhibited in group and one-person shows. Michael Knutson is in charge of the Gallery.

Heilman Artist: Each year the Department of Art, in cooperation with the majors in art, selects an artist to be invited to spend a few days at the College to serve as a visiting artist and critic under the Marjorie Heilman Visiting Artist Program. The work of the invited artist is exhibited in the Wilcox Art Gallery in Commons; he or she gives critiques in the studios and also meets and talks with students, both majors and non-majors, on an informal basis.

Lee Frank Lecture: See p. 13.

Benjamin West Lecture: See p. 13.

Study Abroad: Swarthmore is one of the institutions sponsoring the Intercollegiate Center for Classical Studies in Rome, which provides facilities also for the study of Art History. Art majors, recommended by the Department, are eligible to study at the Center during their junior year, for one semester or two.

REQUIREMENTS AND RECOMMENDATIONS

Prerequisites: Art History 1 or 2 is the prerequisite for all other art history courses in the Department, unless otherwise noted. It is strongly recommended that the appropriate segment of Introduction be taken before an advanced course in a particular subject. Studio Art 1 is the usual prerequisite for studio arts courses; it may be waived by presenting a portfolio. All majors and minors must take Art History 1 and 2; in addition, majors in the Honors and Course Programs alike must take one studio course. It is strongly recommended that these requirements be fulfilled before the junior year. Students are also advised that graduate work in art history requires a reading knowledge of at least German and French.

Course Majors in Art History: The program consists of at least eight courses in Art History (including ARTH 1 and 2), plus one Studio Arts course and Senior Seminar (ARTH 97, required for graduation). Contingent on departmental approval, a two-credit thesis in the fall semester of the senior year may be substituted for Senior Seminar.The Course major in Art History is required to take at

† Absent on leave, 1980-81.

** Fall semester, 1980.

least one course (at Swarthmore) from each of the three core groups: (a) Ancient and Medieval Art — courses 12, 13, 16, and 17; (b) Renaissance and Baroque Art — courses 20, 25, 26, 28, and 29; and (c) Modern Art — courses 30 (only if preceded by ARTH 1 or 2), 32, and 35. Course majors may take Seminars with the consent of the instructor.

Course Majors in Art: The combined program of the Course Major in Art consists of a minimum of five semester courses in Art History, including ARTH 1 and 2, and at least one course in a period before 1800; and a minimum of five semester courses in Studio Arts which must include at least one course in Drawing and one in any three-dimensional medium. There is no Senior Seminar for the Major in Art; but the Comprehensive is a requirement for graduation.

Majors and Minors in The External Examination Program: In addition to ARTH 1 and 2 (and one studio course for majors), majors in the Honors Program should take four seminars in the Department; minors should take two. A corresponding course with an attachment may be substituted for a seminar if that seminar will not be offered during the period of the student's Honors preparation.

Art History

1. Introduction to Art History, I.

A critical and historical study of architecture, sculpture and painting from Ancient Egypt up to and including the Renaissance. Two lectures and one hour conference section per week.
Fall semester. Cothren and Smith.

2. Introduction to Art History, II.

A survey of art and architecture in the West from the Renaissance to the present. Art History I is not required for 2 but is strongly recommended. Two lectures and one hour conference section per week.
Spring Semester. Kitao and Hungerford.

6. Picasso.

An introduction to problems and methods in art history through examination of Picasso and his place in modern art. Symbolism, Cubism, and Surrealism will be emphasized. No prerequisite.
Fall semester. Not offered 1980-81. Hungerford.

12. Greek Art and Archaeology.

The art, architecture and archaeology of ancient Greece from the Minoan period through the Hellenistic age, with emphasis on the Classical period. Major stylistic movements, the oeuvres of individual artists, important iconographical themes of the art and literature, and principle monuments are all set within their historical and cultural context.
Fall semester. Not offered 1980-81. Kettering.

13. Roman Art.

A survey of the art of the Italian peninsula before the ascendancy of the Roman imperium and the subsequent spread of Roman art throughout the empire to the establishment of tetrarchic rule at the end of the third century. Topics to be considered will include the significance of the Greek and Etruscan heritage, art as a manifestation of power, the art of the middle class preserved at Pompeii, portraiture, architecture as theatre, provincialism, and the celebration of triumph. Special attention will be given to the relationship between the social order and artistic production.
Spring semester. Not offered 1980-81. Cothren.

15. Early Christian and Byzantine Art.

An examination of the emergence of a Christian form of artistic expression from the heritage of late antique art, followed by a survey of its international development through the sixth century and its progression in the Byzantine empire centered in Constantinople until the fall of that empire to the Ottoman Turks in 1453. Attention will be given to architecture, its monumental mosaic and fresco decoration, manuscript illumination, iconic devotional images, and the minor arts of ivory carving, metalwork and enamels.
Fall semester. Not offered 1980-81. Cothren.

16. Early Medieval Art in the West.

A survey of the art and architecture of Western Europe from the migration of the barbarian tribes through the establishment of a mature Romanesque style in the twelfth century. The political implications of the Carolingian revival of the classical heritage, monasticism and art, the Book of Kells and Celtic tradition, apocalyptic anxiety around the year 1000, and Romanesque sculpture as ecclesiastical propaganda.
Fall semester. Cothren.

17. Gothic Art.

The formation of Gothic art in the Ile-de-France around the year 1140, its development and codification in France during the thirteenth and fourteenth centuries, and its expansion throughout western Europe. The role of Suger's Neoplatonism in the establishment of a Gothic aesthetic; Saint Louis' "court style" as a statement of political ideology; microarchitecture; the Gothic figural style in sculpture, manuscript illustration, stained glass and the minor arts; Gothic humanism around the year 1200; and influences from Italy in fourteenth century Parisian painting.
Spring semester. Cothren.

20. Northern Renaissance Art.

Art in the Netherlands and Germany in the 15th and 16th centuries with special attention to Jan van Eyck, Rogier van der Weyden, Hugo van der Goes, Bosch, Bruegel and Dürer. Such issues as the development of realism, the influence of patronage, and the impact of Italian art on the North will be considered.
Fall semester. Not offered 1980-81. Kettering.

25. Italian Renaissance Art.

Study of the emergence of a new style in Italy circa 1390 and its aftermath, with special emphasis on Leonardo da Vinci and the young Michelangelo. Topics discussed include humanism in art, historicism, scientific method, secularization, and the artist's role in society. Offered alternately with ARTH 26.
Spring semester. Offered 1981-82. Kitao.

26. Michelangelo and His Times.

Michelangelo's art, architecture, poetry, and artistic theory in relation to his Quattrocento predecessors and High Renaissance contemporaries. Topics include classicism, art as problem-solving, definition of genius, the idea of the canon in art, the rise of art criticism, and Mannerism.
Fall semester. Kitao.

28. Baroque Art.

European art of the 17th century. Special problems considered include: the impact of the Catholic Reformation on art and artists, the question of reality and illusion, the nature of allegory and propaganda in art, the rise of academies and the art market, and the spread of the Baroque style through France, the Low Countries, and Spain. Artists considered include Caravaggio, Bernini, Velazquez, Poussin, Rubens and Rembrandt.
Spring semester. Not offered 1980-81. Kitao.

29. Dutch and Flemish Painting.

Dutch and Flemish painting of the 17th century in its cultural and historical context, with special attention to Rembrandt, Rubens, Hals, Vermeer and van Dyck. Discussion of the impact of the Counter Reformation on art in the Southern Netherlands, of Protestantism in the Dutch Republic, the development of the genres, and the problem of realism.
Spring semester. Not offered 1980-81. Kettering.

30. Modern Architecture.

Architecture in Europe and the United States from 1750 to the present. The prerequisite is waived for students in Engineering.
Fall semester. Not offered 1980-81. Kitao.

32. Nineteenth Century Art.

Developments in European painting, sculpture, and architecture from the late 18th century through the Post-Impressionist generation of Cézanne, van Gogh, and Gauguin. Relevant social, political, economic, and cultural contexts are considered.
Fall semester. Hungerford.

35. Twentieth Century Art.

Painting and sculpture from the Post-Impressionists to the present, considered in the context of relevant social, political, economic, and cultural factors. The course focuses on art in Western Europe through the outbreak of World War II and then turns to developments in the United States beginning c. 1940.
Spring semester. Hungerford.

41. American Art.

Painting and sculpture in the United States from the Colonial Period to the present, with

special attention to the relationship between developments in American art and those in Western European art.
Spring semester. Hungerford.

43. Master Print-Makers.
The development of expression in woodcut, engraving, etching, aquatint, and lithography through the works of Schongauer, Dürer, Rembrandt, Goya, Daumier, Toulouse-Lautrec, Picasso; extensive work with originals in the Print Room of the Philadelphia Museum and elsewhere.
Fall semester. Not offered 1980-81. Kettering.

46. Asian Art.
An introduction to the art of Asia through the study of selected periods in the artistic development of China, India, and Japan. The course will begin with early archaeological material from China, will consider art in relationship to religious thought, and will conclude with Japanese pictorial arts in the eighteenth and nineteenth centuries. Painting, ceramics, metalwork, prints, architecture, gardens, and sculpture will be examined.
Spring semester. Not offered 1980-81. Cothren.

48. Islamic Art.
An introduction to the art and architecture of the Islamic world. Emphasis will be on the development of a characteristic Islamic form of expression and its major regional and dynastic manifestations.
Spring semester. Cothren.

54. The City.
Analytical study of visual and physical aspects of the man-made environment: buildings as signs and the spaces between them. Topics include the anatomy of space, urban iconography, dwelling and social behavior, cities and streets in history, theories of design and planning, and preservation, with special emphasis on Rome, London, Paris, and Philadelphia.
Fall semester. Not offered 1980-81. Kitao.

55. Philadelphia: City and Architecture.
Architecture and urban forms, focusing on Philadelphia, in relation to the Europe of Neoclassicism, Georgian and Victorian London, Paris of the Second Empire, the Chicago School, the International Style, and Post-Modernism; topics include orthogonal planning, Penn's idealism, the row house phenomenon, the Centennial Exhibition, urban renewal and historic preservation.
Fall semester. Not offered 1981-82. Kitao.

65. Classical Heritage in Architecture.
Renaissance and Baroque architetcure, mostly churches and palaces, considering primarily the syntactics of the Classical Order; topics include the serial and central systems, Michelangelesque subversion, Mannerist ambiguity, rhetoric of the facade, Baroque geometry, cosmology and liturgy, and regional transformations.
Spring semester. Not offered 1980-81. Kitao.

74. History of Photography.
Origins and development of photography as a form of artistic expression and cultural communication, with emphasis on the 19th and early 20th centuries.
Fall semester. Hungerford.

75. The Cinema.
Cinema as visual and narrative art; close analysis of a few selected works (*Blue Angel, Rules of the Game, Citizen Kane*) in the first half, followed by a historical survey and study of principal critical theories (Eisenstein, Bazin and Metz). Screening, lectures, discussions, papers and filming exercises. The prerequisite of ARTH 1 or 2 may be waived with the instructor's consent; recommended to advanced students only; class limited to twenty.
Spring semester. Kitao.

77. Special Topic in The Cinema.
The topic treated is alternately Hollywood in the Thirties, and critical theories in the cinema.
Not offered 1980-81. Kitao.

91. Special Topics.
Staff.

93. Directed Reading.
Staff.

97. Senior Seminar.
For Course majors in Art History only. As part of this course the students will write a Senior Paper, which will serve as the Comprehensive Examination. The topic of the paper, which may vary periodically, will be defined by the Department.
Spring semester. Cothren.

99. Senior Thesis.
Contingent on departmental approval, a two-credit thesis in the fall semester of the senior year may be substituted for Senior Seminar. For Course majors in Art History only.
Staff.

SEMINARS

Seminars are open to all majors with the consent of the instructor; for Honors candidates an appropriate course with an attachment may be substituted for a seminar in the event that seminar is not offered during the two years in which the student is eligible to take seminars.

112. Greek Art.
Not offered 1980-81. Kettering.

117. Gothic Art.
Not offered 1980-81. Cothren.

120. Northern Renaissance Art.
Fall semester. Not offered 1980-81. Kettering.

121. Master Print Makers.
Fall semester. Not offered 1980-81. Kettering.

125. Italian Renaissance Art.
Spring semester, 1980-81 Kitao.

128. Baroque Art.
Fall semester. Offered 1982-83. Kitao.

132. Nineteenth Century Art.
Spring semester. Offered 1981-82. Hungerford.

135. Twentieth Century Art.
Fall semester. Hungerford.

148. Islamic Painting.
Not offered 1980-81. Cothren.

191. Special Topics.
Staff.

195. Thesis.
Staff.

Studio Arts

Studio Arts courses meet six hours weekly in two three-hour sessions; all courses are for full course credit unless otherwise noted.

1. Introduction to Studio Arts.
Explorations in the visual description and construction of objects and ideas; problems in drawing, color, and three-dimensional form. Attention will be given both to the theoretical aspects of the work and to the development of studio techniques.
Each semester. Meunier and Knutson.

2. Pottery.
An introduction to the techniques of potter. No credit.
Fall semester. Snyder.

3. Drawing.
Studio work from perception, with emphasis on perspective and the effects of light and shadow in still life, landscape, and the human form. Weekly outside assignments and the final project.
Each semester. Knutson.

4. Sculpture.
Assemblage. Investigation of three-dimensional forms through assemblage and construction; emphasis on contemporary methods and concepts, e.g., ready-mades and transformations.
Fall semester. Meunier.

5. Ceramics.
Techniques of forming (wheel and hand-built), glazing and firing (raku, low-fire, porcelain, stoneware and salt); understanding, mastery, and use of these techniques towards a personal understanding and expression in the medium. Admission at the discretion of the instructor and with the approval of the Department.
Fall semester. Snyder.

6. Photography.
Introduction to the technical processes and visual and theoretical concepts of photography, both as a unique medium and as it relates to other forms of non-photographic composition.
Each semester. Meunier.

7. Sculpture: Figure Modelling.
Exploration and creation of three-dimensional forms through the plastic medium of clay; emphasis on the techniques of carving, modelling and casting, and the problems of representation.
Spring semester. Meunier.

8. Painting.
Studio work ranges from basic studio practices (building stretchers and preparing the canvas support) to transforming oil paint into color perceived in still life, landscape, and figure motifs.
Each semester. Knutson.

9. Printmaking.
Techniques of intaglio, serigraph, woodcut, and the aesthetic possibilities of these techniques singly and in combination.
Not offered 1980-81. Meunier.

10. Art and Science.
Explorations into scientific and technological aspects of art; applications of mathematical, scientific and technological methods in artistic creations; uses of Euclidian geometry, serial systems physical transformations, structural analysis, moiré and other optical phenomena, computer (optional) and cybernetics, and machines. Open to all students without prerequisite.
Fall semester. Snyder.

13. Advanced Drawing.
Each semester. Knutson.

14. Advanced Sculpture.
Each semester. Meunier.

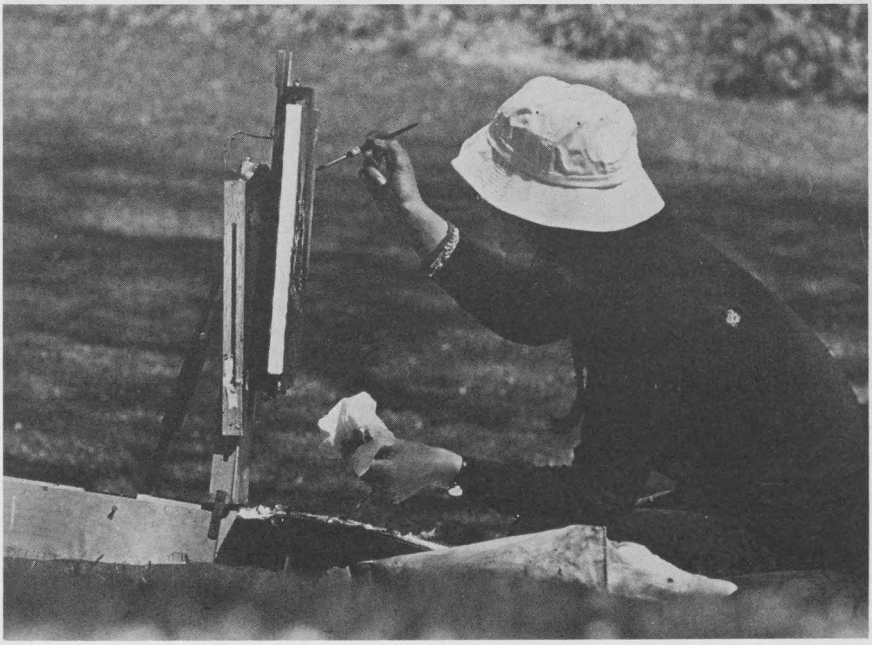
15. Advanced Ceramics.
Fall semester. Snyder.

16. Advanced Photography.
Each semester. Meunier.

18. Advanced Painting.
Each semester. Knutson.

19. Advanced Graphics.
Fall semester. Meunier.

20. Special Studies.
Staff.



Asian Studies

Coordinator: **ALFRED BLOOM**

The Asian Studies Program provides an opportunity for students to become familiar with the traditions and cultures of East, South, and Southeast Asia. By fulfilling the requirements indicated below students may graduate with a Concentration in Asian Studies in addition to a regular major. A concentration may focus on East, South, or Southeast Asia. Alternatively, it may apply the approaches of one or two disciplines to more than one of these areas. The concentration is open to majors in all departments.

A student intending to concentrate in Asian Studies should submit a program proposal for approval by a subcommittee of the Asian Studies faculty by the end of the Sophomore year. The proposal should be the result of discussion with a member of the Asian Studies faculty drawn, whenever possible, from the student's major department. It will explain what the student intends to undertake and how the Asian Studies Concentration will relate to his or her departmental major. Insofar as possible the courses or seminars required for the major and those for the Concentration should be chosen in a way that will comprise a well integrated and focussed program.

Each concentration must include at least five Asian Studies credits. At least three of them must be outside the major department and must be chosen from at least two other departments. In order to provide students with a common experience, a shared basis for identification and discussion, and a basic preparation for continuing study in the Asian area, each candidate in addition will normally be required to include in his or her program two of the following courses: History 9 (Chinese Civilization), History 72 (Japanese Civilization), Religion 10 (The Hindu Tradition), Religion 11 (The Buddhist Tradition). Finally, in the senior year each student must either write a major research paper on a topic approved by the Asian Studies Committee followed by an oral examination administered by the Committee, or take a comprehensive examination administered by the Committee on the program he or she has set out. A thesis or major paper written for another department may, with the approval of the Committee, and with an oral examination administered by the Committee, be substituted for this requirement.

Courses and seminars presently offered that count toward fulfillment of the Asian Studies Concentration:

Department of Art
46. Asian Art

Department of History
9. Chinese Civilization
72. Japanese Civilization
74. Modern China
75. Modern Japan
77. China: the Politics of History
144. Modern East Asia

Department of Political Science
19. Comparative Communist Politics
20. Politics of China
107. Comparative Communist Politics

Department of Religion
2. Patterns of Asian Religions
10. The Hindu Tradition
11. The Buddhist Tradition
28. East Asian Classics in Translation
29. Self-cultivation in East Asian Religions
31. Indian Religious Literature
32. Religions in East Asia
104. Religion in Southeast Asia

Any course in an Asian Language above the second year level (one credit of first or second year language may be counted toward the concentration).

Other courses and seminars which include Asian materials (see departmental listings for year offered):

Department of Economics
11. Economic Development
31. Comparative Economic Systems
70. The Political Economy of Communist Systems
(Cross-listed as Political Science 70)
106. Comparative Economic Systems
109. Economic Development

Department of Modern Languages
1B-2B Introduction to Mandarin Chinese

Department of Political Science

70. The Political Economy of Communist Systems

(Cross-listed as Economics 70)

Department of Religion

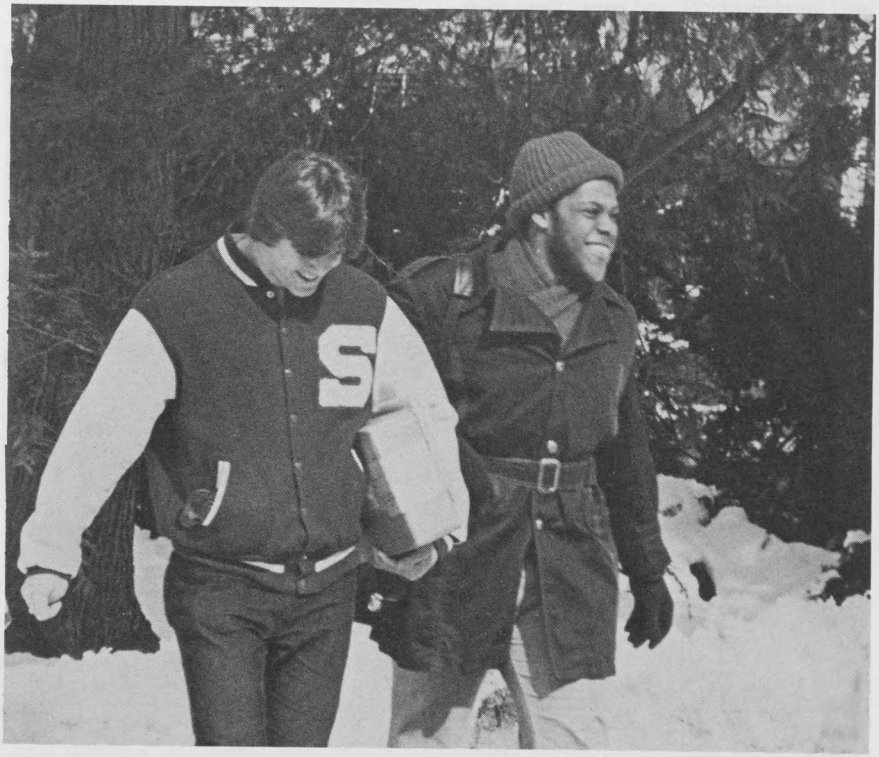
13. Comparative Religious Mysticism
101. Religious Perspectives East and West

Department of Sociology and Anthropology

30. Religion as a Cultural Institution
107. Religion as a Cultural Institution

In planning their programs, students may wish to consult one of the following Asian Studies faculty members: Alfred Bloom (Linguistics), Michael Cothren (Art), T. Kaori Kitao (Art), Cecilia Lee (Modern Languages), Lillian M. Li (History), Kenneth Lieberthal (Political Science), Linda Lim (Economics), K. Priscilla Pederson (Religion), Steven Piker (Sociology-Anthropology), or Donald K. Swearer (Religion).

Students concentrating in Asian Studies should be aware of the opportunities which exist outside of Swarthmore for Asian language and Asian area studies: cross-registration at Bryn Mawr, Haverford, and the University of Pennsylvania during the regular academic year; study at institutes such as the Middlebury College Summer Language School during the summer; and overseas programs in India, Japan, Hongkong, and the Republic of China (Taiwan). Overseas programs will normally be undertaken during the junior year and presuppose work in Asian Studies. Students who are interested in participating should plan well in advance so that they can take the necessary prior work as well as fulfill their other academic obligations while at Swarthmore.



Astronomy

WULFF D. HEINTZ, Professor and Chairman
SARAH LEE LIPPINCOTT, Professor and Director of Sproul Observatory§§§
HARRY J. AUGENSEN, Lecturer
JOHN L. HERSHEY, Research Associate, Sproul Observatory (part time)

Astronomy deals with the nature of the universe about us and the methods employed to derive the laws underlying the observed phenomena. The introductory courses present the problems in broad outlines, and trace the growth of knowledge of facts and development of theories. The advanced courses and seminars consider some of these areas in detail, with some emphasis on the departmental research programs.

The principal telescope of the Sproul Observatory, the 61 cm refractor with a focal length of 11 meters, has been in constant operation since 1912 and was renovated in 1966. It is used for photographic and visual observations leading to an accurate study of the motions, distances, orbits, and masses of the nearer stellar systems. The astrometric plate collection steadily grows, and is already the largest of its kind to have come from a single instrument. A two-screw measuring machine installed in 1971 provides precise and fast measurements of the photographs. The Sproul Observatory is open to visitors on the second Tuesday night each month during the college year (September through May, see monthly College calendar for open hours). A 15 cm refractor and a 20 cm reflector are available for student practical work. The library possesses a large collection of research publications acquired through international exchange.

REQUIREMENTS AND RECOMMENDATIONS

Prerequisites for an Astronomy major are Astronomy 5, 6, advanced courses or seminars, combined with work in mathematics and physics, and a reading knowledge of one foreign language.

GRADUATE WORK

In conformity with the general regulations for work leading to the Master's degree (page 81), this Department offers the possibility for graduate work. Candidates will normally take three or four Seminars, selected from mathematics, physics, and astronomy, and present a thesis. A reading knowledge of two foreign languages is required.

1, 2. Introductory Astronomy.
The courses survey the probing of the universe by theory and observation, and include basic notions of physics as needed in astronomical applications. Three class periods each week; practical work to be arranged. Recommended as a full-year course.

Fall: Constellations and stars. Astronomical instruments and radiation. Properties, structure and evolution of stars.

Spring: The celestial sphere and orbital motions. The solar system. The Milky Way. Extragalactic systems, radio results, and large-distance studies.
Heintz.

§§§ On half-time leave, 1980-81.

5, 6. General Astronomy.
The courses introduce the methods and results of astronomy and astrophysics, emphasizing some topical and mathematical aspects. (Contents similar to 1, 2.)
Prerequisite: Mathematics 5, or equivalent. Physics 3, 4 may be taken concurrently. Astronomy 1 or 5 is prerequisite for 6.
Augensen.

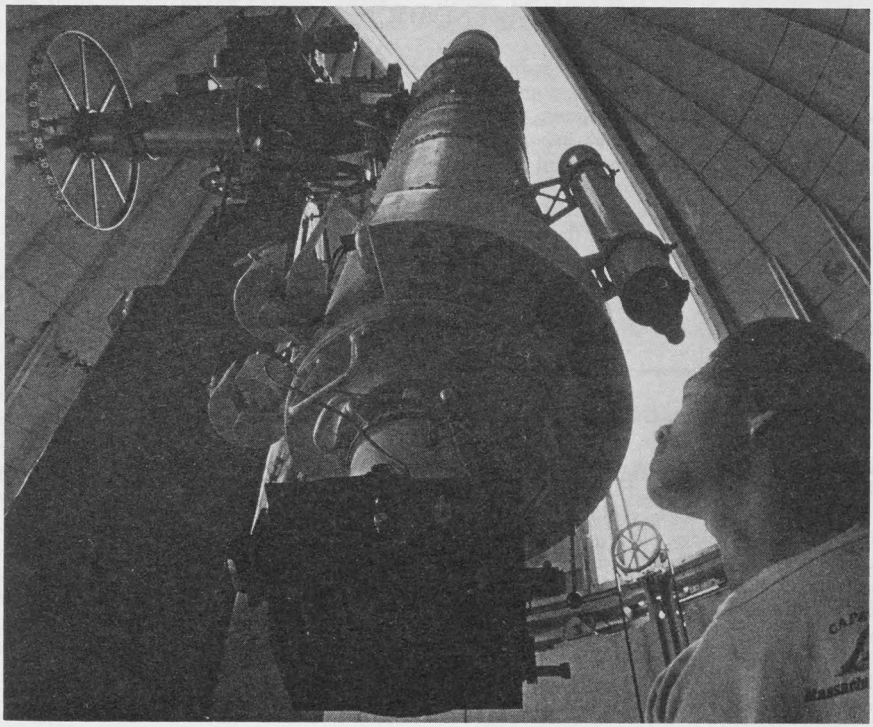
9. Introduction to Meteorology.
Elements, observations, and predictions of weather. The structure of the atmosphere.
Fall term. Heintz.

51. Orbit Theory.
Mechanics of two- and three-body systems, applied to orbits, perturbation theory, satellite motions.
Prerequisites: Astronomy 2 or 6, Mathematics 5A.
Spring term. Heintz.

64. Galactic Structure.
Observational and theoretical results on the Milky Way Galaxy, including stellar populations, H-R diagram, luminosity function, stellar dynamics, spiral structure, and mass distribution. Projects will include computer use.
Prerequisites: Astronomy 6, Math 11 or equivalent.
Spring term. Augensen.

93. Directed Reading.
Subject area: Stellar models.
Staff.

94. Research Project.
For qualifed students in collaboration with faculty members.
Staff.



Biology

ROBERT E. SAVAGE, Professor and Chairman
JOHN B. JENKINS, Associate Professor
MARGARET L. MIOVIC, Associate Professor
TIMOTHY C. WILLIAMS, Associate Professor
GREGORY L. FLORANT, Assistant Professor
SCOTT F. GILBERT, Assistant Professor
MARK JACOBS, Assistant Professor
MARY BETH SAFFO, Assistant Professor
JACOB WEINER, Assistant Professor
BARBARA Y. STEWART, Lecturer
GLORIA U. ROSEN, Assistant
JEAN L. TOMEZSKO, Assistant

The student may be introduced to the study of biology by taking Biology 1 and Biology 2. Either course may be taken first. A diversity of advanced courses, some offered in alternate years, affords the student the opportunity of building a broad biological background while concentrating, if he or she chooses, in some specialized area such as botany, zoology, cellular and developmental biology, physiology, genetics and evolution, ecology, or ethology.

REQUIREMENTS AND RECOMMENDATIONS

Students electing a Course major in Biology should include the following supporting subjects in addition to the minimum of eight courses composing the major: introductory chemistry, at least one semester of organic chemistry, and two semesters of college mathematics. These courses should be completed before the senior year. Introductory physics is strongly recommended, and is prerequisite to some departmental offerings. Further, it should be noted that medical schools and graduate schools in biology require introductory physics for admission.

Certain limitations may be made in the student's freedom of choice in selection of biology courses due to heavy enrollment and space limitations. Seniors will have priority of enrollment over juniors, and juniors over sophomores. However, upon completion of eight courses in the Department the student assumes lowest priority irrespective of class standing. Some space in advanced courses will be reserved for non-majors.

EXTERNAL EXAMINATION PROGRAM

Qualified students may prepare for External Examinations in animal behavior, cytology, developmental biology, ecology, evolution, genetics, microbiology, plant or animal physiology via seminars or combinations of courses. Admission to the Honors Program is based on academic record and completion of prerequisites for the courses or seminars used in preparation for external examination. Departmental requirements in chemistry and mathematics must also be fulfilled. Students majoring in Biology include Thesis, Biology 180, as part of their program.

1. Cellular and Molecular Biology. An introductory study of phenomena fundamental to living systems illustrated by examples drawn from the fields of microbiology, cell biology, genetics, and developmental biology. Emphasis is upon the means by which biologists have attempted to

elucidate these phenomena rather than upon a survey of them.
One laboratory period per week.
Enrollment limited to 144.
Fall semester. Staff.

2. Organismal and Population Biology.

An introduction to the study of whole organisms, chiefly the higher plants and animals. Stress is placed on adaptive aspects of the morphology and physiology of organisms, their development, behavior, ecology, and evolution.
One laboratory period per week.
Enrollment limited to 144.
Spring semester. Staff.

12. The Vertebrates.

A consideration of the anatomy of vertebrate classes from an evolutionary viewpoint. Structure and function of particular vertebrate organs are emphasized. Laboratory exercises include dissection, physiological demonstrations, films, an introduction to basic histology, and when possible, radiographic presentations.
One laboratory period per week.
Prerequisites: Biology 1, 2.
Enrollment limited to 40.
Spring semester. Florant.

17. Systematic Botany.

Classification and identification of vascular plants, with greatest emphasis on the family level. Stress is upon the flora of the northeastern United States. The course is open to biology majors and interested non-majors.
Two lecture-laboratory periods or field trips per week.
Prerequisites: Biology 2 or consent of instructor.
Enrollment limited to 16 students.
Spring semester. Not offered 1980-81. Weiner.

20. Genetics.

An examination of the transmission, structure, and function of the genetic material. The course content includes the establishment of Mendelism; the chromosome theory of inheritance; the expansion of Mendelism; the identification, structure, and replication of the genetic material; gene function; bacterial and viral genetics and the regulation of gene activity during development.
One laboratory period per week.
Prerequisite: Biology 1.
Spring semester. Jenkins.

21. Cell Biology.

A study of the ultrastructure and function of cell components, including cell division and development, biosynthesis of macromolecules, and intermediary metabolism. Laboratory exercises are designed to illustrate the variety of approaches to findings in cell biology.
One laboratory period per week.
Prerequisites: Biology 1, and concurrent enrollment in Organic Chemistry.
Enrollment limited to 40.
Spring semester. Savage.

25. Field Studies in Animal Behavior.

Ethological studies of animal behavior under natural conditions. Subjects of study include primarily vertebrates and the social insects. Class work involves both lectures and seminar format. Laboratories consist of field trips and small group projects in the local area.
One laboratory period per week.
Prerequisites: Biology 1 and 2.
Enrollment limited to 24.
Alternate years, Fall semester. Not offered 1979-80. Williams.

26. Adaptational Plant Anatomy.

An examination of the anatomical adaptations of vascular plants to environmental factors, principally light, water, temperature and biotic factors. Topics include the adaptive anatomy/morphology of hydrophytes, xerophytes, epiphytes, arctic and alpine plants, insectivorous plants, and plants' flowers, fruits and seeds.
One laboratory period per week.
Prerequisites: Biology 1, 2.
Enrollment limited to 20.
Alternate years, Spring semester. Jacobs.

27. Plant Development.

A study of those processes responsible for the development of multicellular plants. Morphogenesis, cytodifferentiation, growth control

and current theories for the generation of pattern are discussed.
One laboratory period per week.
Prerequisites: Biology 1, 2.
Alternate years, Spring semester. Jacobs.

32. Topics in Molecular Biology.

This course deals with selected topics in molecular biology including membrane structure and function, lipid metabolism, energy transduction, transport systems and mechanisms for the control and regulation of cellular activity. Students are required to present a major report on a selected area of contemporary research.
Prerequisites: Biology 1 and concurrent enrollment in Organic Chemistry.
Not offered 1980-81. Stewart.

36. Invertebrate Zoology.

The evolution and adaptive biology of invertebrate animals. Consideration is given to adaptive morphology, phylogeny, ecology, physiology, and comparative biochemistry of invertebrates.
One laboratory period per week. Occasional field trips.
Prerequisites: Biology 1 and 2.
Fall semester. Saffo.

37. Plant Physiology.

The principal functions of higher plants, including photosynthesis, gas exchange, water and nutrient transport, mineral metabolism, plant hormone action, and environmental responses.
One laboratory period per week.
Prerequisites: Biology 1, 2, and concurrent enrollment in Organic Chemistry.
Enrollment limited to 20.
Fall semester. Jacobs.

38. Microbiology.

A study of microorganisms with an emphasis on prokaryotes. Mechanisms of energy generation, growth and metabolic regulation, and genetic exchange are studied with stress upon aspects unique to prokaryotes. Ecological diversity is considered with an emphasis on the indispensable role of microorganisms to life on earth. Laboratory exercises are designed to teach techniques of cultivating and identifying bacteria as well as to demonstrate the variety of ways in which prokaryotes can be used to study applied and theoretical questions.
One laboratory period every week.
Prerequisites: Biology 1, and concurrent registration in Organic Chemistry.
Enrollment limited to 24.
Fall semester. Miovic.

40. Evolution.

An introduction to the history and principles of evolutionary biology. The course content includes a brief history of evolutionary theory; population: structure and concept; the principle of the equilibrium population; microevolutionary changes; the process of speciation; and macroevolutionary changes that include selected evolutionary pathways.
One laboratory/discussion period per week.
Prerequisites: Biology 1 and 2.
Fall semester. Not offered 1980-81. Jenkins.

45. Field Studies in Primate Behavior.

An investigation of primate ethology as studied in the animal's natural environment. Particular emphasis is placed on those studies relating social behavior to habitat or population stress. The course includes both lecture and seminar format; although there is no scheduled laboratory, students will be expected to participate in at least one field trip.
Prerequisites: Permission of the instructor and Biology 2 or one introductory level course in Sociology/Anthropology giving an appropriate background in anthropology.
Enrollment limited to 10.
Fall semester. Williams.

50. Marine Biology.

Ecology of oceans and estuaries, including discussions of physiological and structural adaptations of marine animals, plants, and micro-organisms.
One laboratory period per week; several all-day field trips.
Prerequisites: Biology 1 and 2.
Enrollment limited to 16.
Fall semester. Saffo.

51. Cells in Culture.

An examination of the biology of plant and animal cells as revealed by their activitites *in vitro*. The lectures focus on patterns of cell growth, the findings derived from somatic cell

hybridization studies, and cellular aspects of cancer. In the laboratory, techniques of animal and plant cell culture and of somatic cell fusion are introduced. Students then undertake independent investigative projects.
Continuing laboratory work.
Prerequisite: Biology 21 or consent of instructor.
Enrollment limited to 16.
Fall semester. Savage.

52. Developmental Biology.

An integration of molecular and organismal aspects of animal development. Topics include fertilization, embryonic cleavage and gene expression, the formation of representative organs, cell migration in development, developmental genetics, and the roles of the cell surface in development. Laboratory exercises investigate the developmental anatomy of selected organisms in normal and manipulated conditions.
One laboratory period per week.
Prerequisites: Biology 1, 2.
Enrollment limited to 12.
Spring semester. Gilbert.

53. Virology.

A study of the molecular biology of viruses, their modes of gaining entrance to specific cells, their regulation of macromolecular synthesis and assembly and their modes of exit from and/or damage to host cells. Viruses as agents of genetic exchange and the problems of defining what is virus and what is cell are also considered. Laboratory exercises demonstrate basic techniques of working with bacteriophage and mammalian viruses.
One laboratory period every week.
Prerequisites: Biology 38 or 21.
Enrollment limited to 12.
Spring semester. Miovic.

56. Human Genetics.

An examination of human inheritance patterns using techniques of genetic analysis that are appropriate to humans. Research into the structure, function, organization and regulation of the human genome will be discussed, along with applications of current research.
Laboratory project.
Prerequisites: Biology 1 or 2.
Enrollment limited.
Spring semester. Jenkins.

57. Comparative Animal Physiology.

A comparison of major physiological systems among vertebrates. The endocrine, cardiovascular, renal, respiratory, and central nervous systems are studied in detail. Emphasis is also placed on physiological control processes involved in the various adaptations to unusual environments. Laboratory exercises include investigation of physiological responses to different stimuli in various species, including humans.
One laboratory period per week.
Prerequisites: Biology 1, 2, Vertebrate Morphology or equivalent, Physics 2 or 4, and Organic Chemistry.
Fall semester. Florant.

60. Biology of Animal Communities.

The study of animals at the level of populations with particular reference to social behavior as an adaptive trait. Topics covered include levels of social organization, animal ecology, population biology and evolution, and physiological and behavioral regulation of population numbers. About half the material is presented in lecture format; the remainder, a consideration of relevant studies in sociobiology, is discussed in seminar format (cf. Biology 25).
One laboratory period per week.
Prerequisites: Biology 1, 2, and one other Biology course.
Enrollment limited to 24.
Alternate years, Fall semester. Williams.

68. Advanced Microbiology.

Physiological and biochemical diversity among microorganisms will be covered with the particular examples studied in depth, relying heavily on readings in current research journals. The course will be conducted as a seminar. Laboratory exercises will illustrate current techniques of molecular biology and will include use of radioactive isotopes.
One laboratory period per week.
Prerequisite: Biology 38.
Enrollment limited to 12.
Spring semester. Miovic.

69. Ecology.

The scientific study of the relationships that determine the distribution and abundance of organisms. Topics covered include interactions between organisms and their environments,

population dynamics, species interactions, community ecology and nutrient cycles.
One laboratory period or field trip per week.
Prerequisites: Biology 1 and 2.
Enrollment limited to 25.
Fall semester. Weiner.

70. Plant Ecology.

An advanced course which considers plant individuals, populations and communities in their relationships with their physical and biological environments. Areas developed include climatology, soil science, plant population biology, competition, herbivory, plant communities and ecosystem analysis. Laboratory and field work emphasize hypothesis formation and the collection, analysis and interpretation of data.
One laboratory period or field trip per week. All Saturdays during the first half of the semester must be reserved for field work.
Prerequisites: Biology 1, 2, concurrent enrollment in Biology 69 and consent of instructor.
Enrollment limited to 12.
Fall semester. Weiner.

74. Advanced Topics in Developmental Biology I: Developmental Genetics.

An investigation of the various mechanisms governing eukaryotic gene expression concentrating on gene activity in early development and on specific cases of differential genetic regulation during vertebrate development.
Seminar format.
Prerequisites: Biology 21, 52, or permission of instructor.
Fall semester. Gilbert.

77. Advanced Topics in Plant Physiology and Development.

An in-depth consideration of currently important aspects of plant physiology and development, with particular emphasis on a critical study of original sources. The topic will vary from year to year.
One seminar meeting each week and continuing laboratory projects.
Prerequisites: Biology 37 or 27, and Chemistry 28.
Enrollment limited to 10.
Fall semester. Jacobs.

78. Physiological Mechanisms of Animal Behavior.

A consideration of the mechanisms underlying animal behavior. Areas of primary interest are neurophysiology, hormonal regulation of behavior, sensory physiology, orientation, and biorhythms. Material is presented in both lecture and seminar format. Laboratory work consists of small group research projects.
One laboratory period per week.
Prerequisites: Biology 1, 2, at least one other Biology course, and Physics 2 or 4.
Spring semester. Williams.

84. Biology of Symbiosis.

Intimate associations between taxonomically dissimilar organisms. Investigation of relationships between animals, plants, and microorganisms at biochemical, physiological, structural, and ecological levels.
Lectures, discussions, and laboratory. A 2-credit colloquium.
Prerequisites: Biology 1 and 2, and one other Biology course.
Spring semester. Saffo.

93. Directed Reading.

With the permission of a staff member who is willing to supervise it, a qualified student may undertake a program of directed reading in an area of biology not included in the curriculum, or as an extension of one of his/her courses.
Fall or spring semester. Staff.

94. Research Project.

With the permission of the Department, qualified students may elect to pursue a research program not included in the regular Course program.
Staff.

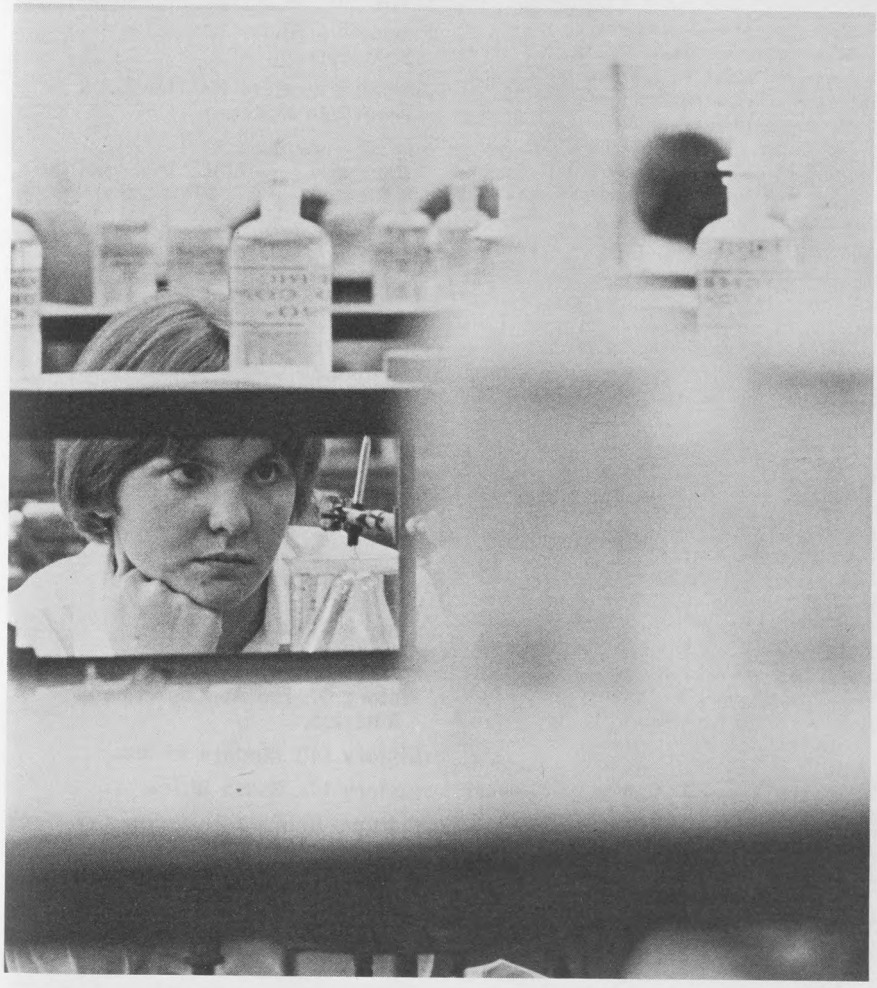
95. Senior Paper.

A senior paper is required of all senior Course majors in Biology in satisfaction of the requirement of a comprehensive examination for graduation. However, students are not required to enroll in 95 while writing the paper. Does not count as a course for the major.

SEMINARS

102. Cytology.
An advanced study of biological structure and function at a cellular level. Students carry out independent investigative laboratory projects. Prerequisite: Biology 21.
Fall semester. Not offered 1980-81. Savage.

180. Thesis.
With the permission of the Department, qualified students may elect to pursue a research problem not included in the regular offerings in the Honors Program. The thesis is submitted for evaluation by an Honors Examiner.
Staff.



Black Studies

Coordinators: **Craig Williamson,** Fall semester
Jerome H. Wood, Jr., Spring semester

The purpose of the Black Studies Program is (1) to introduce students to the history, culture, society, and political and economic conditions of Black people in Africa, the Americas, and elsewhere in the world; and (2) to explore new approaches — in perspectives, analyses and interdisciplinary techniques — appropriate to the study of the Black experience.

Students in any department may add a Concentration in Black Studies to their departmental major by fulfilling the requirements stated below. Applications for admission to the Concentration should be made in the spring semester of the sophomore year to the Coordinator of the Program. All programs must be approved by the Committee on Black Studies.

All Concentrators in Black Studies are required to take History 7, as early as feasible, and Black Studies 91, ordinarily in the last semester of the senior year. They must take a minimum of five courses in Black Studies. These must include at least three courses (which may include Black Studies 91) outside the departmental major, from at least two departments other than the major.

Black Studies 91, Special Topics in Black Studies, will take the form of a one-credit tutorial (if there are three or fewer students in any one year) or a seminar (if there are four or more students), with all senior Concentrators participating. The topics selected for reading, class discussions, and the writing of seminar papers will be drawn from a list of representative works in Black Studies from a variety of disciplines and perspectives and will depend on the interests and backgrounds of the participants. The tutorial or seminar will normally be taken in the spring semester of the senior year, and will culminate in a comprehensive examination administered by the Black Studies Committee.

Courses of the Black Studies Concentration are listed below. Courses of independent study, special attachments on subjects relevant to Black Studies, and courses offered by visiting faculty (those courses not regularly listed in the College Bulletin) may, at the discretion of the Black Studies Committee, be included in the Program. Students who wish to pursue these possibilities should consult with the appropriate department and with the Black Studies Committee.

Economics 26. Social Economics.

Economics 60. African Economic Development.

English Literature 29. The Black American Writer.

English Literature 47. The Contemporary Black Writer of the United States.

English Literature 49. The American Autobiography.

English Literature 55. The Black African Writer.

English Literature 81. Colloquium: Wright, Ellison, Baldwin.

History 7. African-American History.

History 8. Africa.

History 55. Traditions in Twentieth Century Black America.

History 56. Ex-Slave Narratives.

History 57. Oral History.

History 58. The World of W.E.B. DuBois.

History 63. South Africa.

History 67. The African in Latin America.

History 140. Modern Africa.

History 141. South Africa.

Political Science 21. Politics of Black Africa.

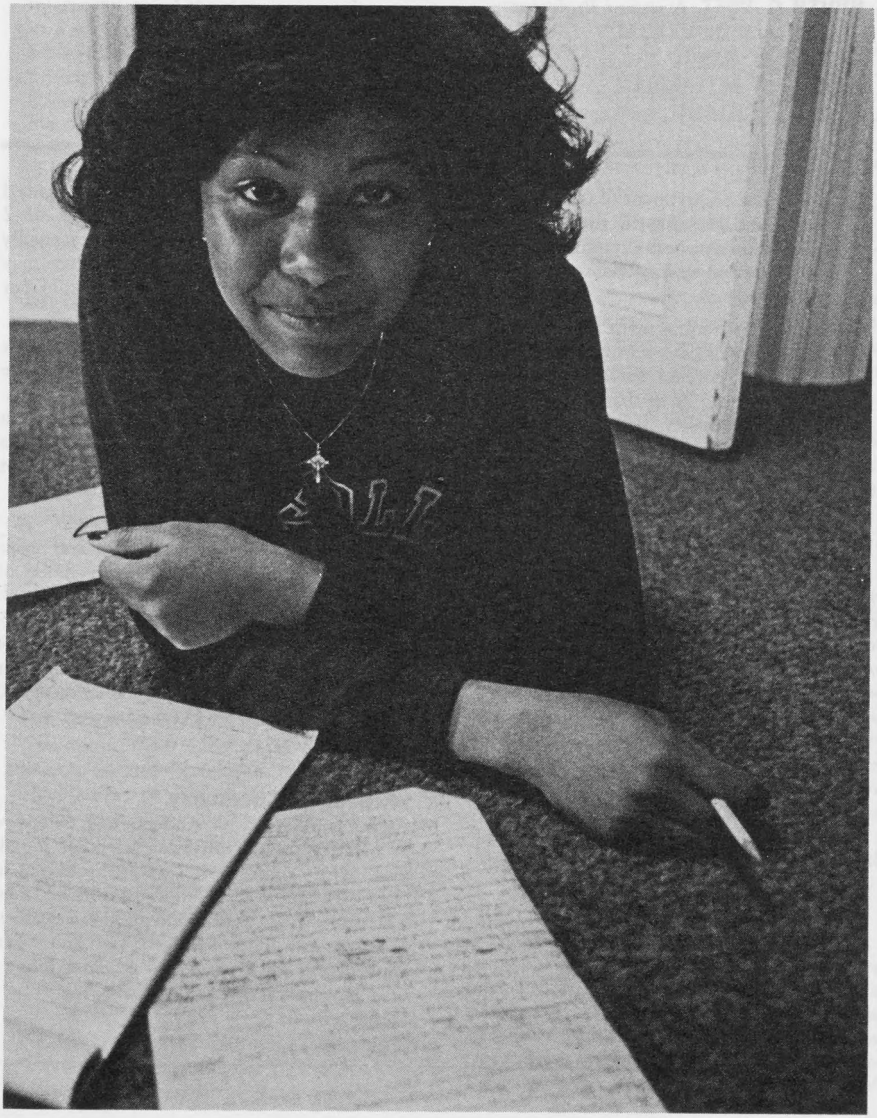
Sociology-Anthropology 27. Afro-American Culture and Society.

Sociology-Anthropology 36. Peoples and Cultures of Africa.

Sociology-Anthropology 42. Caribbean Society.

Sociology-Anthropology 65. The Sociology of Race and Ethnicity.

Black Studies 91. Special Topics in Black Studies.



Chemistry

EDWARD A. FEHNEL, Professor
JAMES H. HAMMONS, Professor and Chairman
PETER T. THOMPSON, Professor†
WILLIAM H. BATSCHELET, Assistant Professor
JUDITH C. HEMPEL, Assistant Professor†
CAROL C. KAHLER, Assistant Professor
JUDITH G. VOET, Assistant Professor
EUGENE J. ROSENBAUM, Lecturer**
URSULA M. DAVIS, Assistant
MARGARET M. LEHMAN, Assistant
NITA H. SICILIANO, Assistant

The aim of the Department of Chemistry is to provide sound training in the fundamental principles and basic techniques of the science rather than to deal with specialized branches of the subject.

The minimum requirement for a major in chemistry is eight courses in the Department including two courses each in organic and physical chemistry. Note that the prerequisites for physical chemistry include a year each of college-level physics and mathematics. Those considering majoring in chemistry are strongly urged to complete the physics prerequisite by the end of the sophomore year.

Those students planning further professional work in chemistry should include in their programs a second year of mathematics and two additional courses in chemistry. Students who intend to pursue a career in chemical industry should seek a degree accredited by the American Chemical Society, and should include both Chemistry 57 and 65 in their programs. Further, proficiency in reading scientific German, Russian or French is an asset to the practicing chemist. Research opportunities with individual staff members are available through Chemistry 94. Majors are encouraged to consult the staff about problems under investigation.

In collaboration with the Department of Biology, the Department of Chemistry also offers a Special Major in Biochemistry. Interested students should consult the chairmen of the two departments.

The normal route for entrance to the advanced level program is to take Chemistry 1, 2 followed by 28, 29. Students with especially strong pre-college background in science may be advised to begin with Chemistry 14 (or with Chemistry 28, 29).

Incoming students planning to elect Chemistry 14 (or Chemistry 28, 29) will normally be asked to take a placement examination. Students seeking advanced placement credit in chemistry may also be required to take this examination. Consult with the Department chairman.

1, 2. Introduction to Chemistry.

A study of the central concepts and basic principles of chemistry; the interpretation of chemical properties and reactions through equilibrium constants, oxidation potentials, free energies, thermochemistry; the relation of chemical properties to atomic and molecular structure and to the Periodic Table; rates and mechanisms of chemical reactions.
One laboratory period weekly.
Fall and spring semester. Staff.

14. General Chemistry.

A course intended for students with extensive preparation in the physical sciences. It will deal with topics of current interest in chemistry at a level more advanced than Chemistry 1, 2. Admission to this course is based on consultation with the staff and, when appropriate, on a placement examination.
One laboratory period weekly.
Spring semester.

† Absent on leave, 1980-81.

** Fall semester, 1980.

28, 29. Organic Chemistry.

An introduction to the chemistry of the more important classes of organic compounds, with emphasis on nomenclature, structure, reactions, and methods of synthesis. Current theoretical concepts of structure and mechanism are applied throughout the course to the interpretation of the properties and reactions of a wide variety of organic compounds. The laboratory work illustrates some of the principles and reactions discussed in the classroom and provides practical experience in the techniques involved in synthesizing, isolating, purifying, and characterizing organic compounds.

One laboratory period weekly.

Prerequisite: Chemistry 2 or 14, or permission of the instructor.

Fall and spring semesters. Hammons, Fehnel

51, 52. Physical Chemistry.

An introduction to some basic concepts of physical chemistry with examples drawn from various areas, including biochemistry. Topics may include kinetic theory of gases, elementary quantum theory, symmetry, molecular spectroscopy, chemical kinetics, elementary statistical mechanics, thermodynamics with applications to physical and chemical equilibria, solutions, electrochemical cells, crystallography, surface phenomena, and transport properties of ions and macromolecules.

One laboratory period weekly.

Prerequisites: Chemistry 2 or 14, the equivalent of a year of college-level calculus, and a year of college physics.

Fall and spring semesters. Staff.

56. Organic Structure Determination.

Classroom and laboratory study of the principles and techniques involved in the elucidation of the structures of organic compounds. Emphasis is placed on the correlation of structure and properties of organic molecules and on the theoretical principles underlying various chemical and spectroscopic methods of identification and structure determination.

One four-hour laboratory period weekly.

Prerequisite: Chemistry 28, 29.

Fall semester. Fehnel.

57. Instrumental Chemical Analysis.

A study of the principles and techniques of modern instrumental analysis in chemistry. Elementary electronics with emphasis on digital logic and computer applications of data collection and control in chemical analysis are studied. One four-hour laboratory weekly.

Prerequisite: Chemistry 101 or 51 (with concurrent enrollment in 52).

Spring semester. Staff.

58. Biological Chemistry.

An introduction to the chemistry of living systems: protein conformation, principles of biochemical preparation techniques, enzyme mechanisms and kinetics, bioenergetics, intermediary metabolism, and molecular genetics.

Prerequisite: Chemistry 2 (or 14) and 28, 29.

Fall semester. Voet.

63. Quantum Chemistry.

Quantum theory is developed and applied throughout to a variety of topics including: atomic structure, molecular and atomic spectroscopy, theories of chemical bonding, and molecular structure determination. Symmetry and group theoretical arguments are developed and applied extensively.

Prerequisites: Chemistry 51, 52, or 101 and a second year of mathematics including some linear algebra. Physics and engineering students may take Chemistry 63 without 51, 52, with permission of the instructor.

Fall semester. Staff.

65. Advanced Inorganic Chemistry.

The major areas of current interest in inorganic chemistry are discussed. Considerable emphasis is placed on coordination chemistry, including the occurrence and function of metal complexes in organic and biological systems. Topics include: electronic structure of inorganic molecules; elementary group theory; inorganic reaction mechanisms; organometallic chemistry; bioinorganic chemistry, including metalloenzymes, metallotheraphy, and metal ion toxicology.

Prerequisite: Chemistry 101, or 51 with concurrent registration in 52.

Spring semester. Staff.

67. Advanced Organic Chemistry.

Selected topics in organic chemistry, including resonance and molecular orbital concepts, physical properties of organic compounds, stereochemistry, mechanisms of ionic reactions, free radicals, pericyclic reactions, photochemistry, and other topics of current interest. A

familiarity with physical chemistry is desirable.
Prerequisite: Chemistry 2 (or 14) and 28, 29.
Spring semester. Staff.

78. Advanced Biological Chemistry.

Reading and laboratory projects in a few important areas of current biochemistry, such as enzyme structure and function, spectroscopic methods, nucleic acid conformation, mechanisms of transcriptional and translational control in bacteriophage and in higher organisms, chromosomal organization in eucaryotes, immunochemistry, and membrane-associated phenomena. Biology 20 and/or 21 are recommended.
One discussion period weekly, laboratory to be arranged.
Prerequisite: Chemistry 51 and 58 (or 101), or permission of instructor.
Spring semester. Voet.

94. Research Project.

This course provides the opportunity for qualified upperclass students to participate in research in collaboration with individual staff members. Weekly group meetings of all participants will allow interchange of ideas on research plans, progress, and results. Students who propose to take this course should consult with the staff during the preceding semester concerning problem areas under study. This course may be elected more than once.
Fall and spring semesters. Staff.

98. Special Seminar.

An intensive study of the scientific writings of a distinguished living chemist. Students will read the chemist's publications, make oral presentations, and write a term paper reviewing a major area of the person's research. The chemist will visit the campus for one week, during which students will have the opportunity for direct and extended discussions of his/her work. Does not count as a course for the major.
One-half credit.
Prerequisites: Chemistry 2 (or 14) and 29, and permission of the Department.
Each semester. Offered only in 1980-81. Staff.

SEMINARS

Before admission to the External Examination Program, the chemistry major should complete Chemistry 1, 2 (or 14) and 28, 29, two years of mathematics and two semesters of physics. In addition to selecting one of the seminars below, students may prepare for External Examination papers in Biochemistry (Chemistry 58, 78) and Advanced Physical Chemistry (Chemistry 63, 65). Consult with the Department Chairman.

101. Physical Chemistry.

The gaseous liquid and solid states, solutions, elementary thermodynamics, chemical equilibria, electrochemistry, the kinetics of chemical reactions, elementary quantum theory and statistical mechanics.
Prerequisites: Chemistry 2 or 14; one year of college level physics, and mathematics through multi-variable calculus.
One seminar and laboratory weekly.
Fall semester. Staff.

106. Advanced Organic Chemistry.

An intensive study of essentially the same material covered in Chemistry 67. A familiarity with physical chemistry is desirable.
Prerequisites: Chemistry 2 (or 14) and 28, 29.
Spring semester. Staff.

180. Thesis.

Honors candidates may write a thesis as preparation for one of their papers. The thesis topic must be chosen in consultation with some member of the staff and approved early in the semester preceding the one in which the work is to be done.

Classics

HELEN F. NORTH, Professor and Chairman
MARTIN OSTWALD, Professor
GILBERT P. ROSE, Associate Professor
RICHARD P. SALLER, Assistant Professor

The Department of Classics offers instruction in the various fields which constitute the study of Greek and Roman culture. Courses numbered from 1 to 20 are devoted to the Greek and Latin languages and literatures. Courses numbered from 31 onwards presuppose no knowledge of the Greek or Latin languages and are open (except for 42 and 44) without prerequisite to all students; they deal with the history, mythology, religion, archaeology, and other aspects of the ancient world and include the study of classical literature in translation.

Swarthmore College contributes to the American Academy in Rome and the American School of Classical Studies in Athens, and its students have the privileges accorded to undergraduates from contributing institutions (use of the library at both schools and consultation with the staff). Swarthmore is also one of the institutions sponsoring the Intercollegiate Center for Classical Studies in Rome, which provides facilities for the study of Classics, Archaeology, and Ancient History. Classics majors, recommended by the Department, are eligible to study at the Center, usually during their junior year, either for one semester or for two. Students of the classics are eligible for the Susan P. Cobbs Scholarship and the Susan P. Cobbs Prize Fellowship (see pp. 34 and 87).

REQUIREMENTS AND RECOMMENDATIONS

Greek, Latin, or Ancient History may be offered as a major subject either in the Course Program or in the External Examination Program, and as a minor subject in the latter Program.

A major in Greek or Latin in the External Examination (Honors) Program or in the Course Program should complete during the first two years either Intermediate Greek or Intermediate Latin.

In the Honors Program, a major in Greek is also expected to study Latin through the intermediate level and a major in Latin is expected to study Greek through the intermediate level before graduation.

Minors in Greek or Latin in the Honors Program should complete during the first two years either Intermediate Greek or Intermediate Latin.

A major in Greek or Latin in the Course Program will consist of at least 8 courses in the appropriate language above the introductory level.

Majors in both the Honors Program and the Course Program are required to take for at least one semester a course in prose composition (Greek 9, 10, or Latin 9, 10).

In the Honors program, three or four papers constitute a major in Greek or in Latin. Normally all or all but one of these will be prepared for by seminars. Either Directed Reading in a field in which a seminar is not given (course 93), a thesis, or a course supplemented by additional independent work (i.e., an "attachment") may be used to prepare for the remaining paper. A minimum of two papers constitutes a minor in Greek or in Latin, at least one of which must be prepared for by a seminar.

A major in Ancient History will consist of (1) Classics 42, with attachments, (2) Classics 44, with attachments, and (3) either or both of the

following: Greek 113, Latin 102. The prerequisites for Classics 42 and 44 are Classics 31 and 32. For Greek 113 the prerequisite is one year of Intermediate Greek, for Latin 102, one year of Intermediate Latin.

A minor in Ancient History will consist of (1) and (2) above, with the specified prerequisites.

Greek

1, 2. Intensive First-year Greek.
Greek 1 (fall) imparts a basic knowledge of Ancient Greek grammar sufficient to equip the student to begin reading after one semester. It meets four days per week and carries 1½ credits. Greek 2 (spring) is an introduction to Greek literature. A major work of the Classical period is read, usually a dialogue of Plato. It meets four days per week and carries 1½ credits.
Year course. Rose.

9, 10. Greek Prose Composition.
Course meets one hour a week. A requirement for majors, this course is recommended in conjunction with courses at the intermediate level or above, to provide the student with grammatical and stylistic exercise.
Half course, one semester each year. Rose.

11. Intermediate Greek Reading.
A tragedy and some Attic prose are read.
Fall semester. North.

12. Homer.
Selections from either the *Iliad* or the *Odyssey* are read in Greek; the remainder of the poem is read in translation.
Spring semester. Ostwald.

19. Comparative Grammar of Greek and Latin.
A study of the phonology, morphology, and inflection of Greek and Latin words derivable from their common source, Proto-Indo-European. Students should have some knowledge of both Classical languages, but no prior experience in linguistics is assumed.
Given in alternate years.
Fall semester. Rose.

91. Special Topics.
Readings selected to fit the needs of individual seniors in preparation for their comprehensive examinations.
Spring semester. Staff.

93. Directed Reading.
A program of independent work under the supervision of the instructor. It is open only to advanced students and may be taken only with the consent of the Department chairman.
Staff.

95. Attachment.
Additional, independent work attached to an advanced course, normally used to prepare for an external examination, but available also to Course students for the purposes described on page 68 (Formats of Instruction).
Staff.

Latin

1, 2. Intensive First-year Latin.
An intensive course in the essentials of Latin grammar aiming to provide sufficient knowledge of the language to make possible the study and appreciation of Latin literature.

Study of the language is combined with additional meetings in which students are introduced to a wide range of topics related to the study of Latin. These include such subjects as Roman art, archaeology, palaeography, religion, and (in translation) masterpieces of Latin literature. These meetings will normally be conducted by specialists from the Swarthmore faculty and from neighboring colleges.

The course will have four one-hour meetings each week. It carries one and one-half course credits each semester.
Year course. Saller.

9, 10. Latin Prose Composition.
The development of Latin prose style is studied, with an analysis of Latin texts and extensive translation of English into Latin. A requirement for majors, it is recommended in conjunction with Latin 11 and Latin 12. The course meets one hour a week.
Half course, one semester each year. Rose.

11. Intermediate Latin: Catullus.
A study of the lyric, elegiac, and hexameter poetry of Catullus. This course follows Latin 2 and is open to those with two or three years of high school Latin.
Fall semester. Ostwald.

12. Intermediate Latin: Cicero.
An oration and selected letters. This course is designed to introduce students to a great historical and literary figure of the Roman Republic. It combines a study of his major political and literary achievements with a careful analysis of his prose style.
Spring semester. Staff.

13. Literature of the Augustan Age.
Latin elegiac poetry: Ovid, Tibullus, Propertius.
Fall semester. North.

14. Mediaeval Latin.
Works chosen from the principal types of mediaeval Latin literature (including religious and secular poetry, history and chronicles, saints' lives, satire, philosophy, and romances) are studied in this course.
Spring semester. North.

91. Special Topics.
Readings selected to fit the needs of individual seniors in preparation for their comprehensive examinations.
Spring semester. Staff.

93. Directed Reading.
A program of independent work under the supervision of the instructor. It is open only to advanced students and may be taken only with the consent of the Department chairman.
Staff.

95. Attachment.
Additional, independent work attached to an advanced course, normally used to prepare for an external examination, but available also to Course students for the purposes described on page 66 (Formats of Instruction).
Staff.

Ancient History and Civilization

31. History of Greece.
The course is devoted to the study of the political and social history of the Greek states to the time of the Hellenistic kingdoms. Special attention is given to the 6th and 5th centuries B.C. Considerable reading is done in the primary sources in translation. Classics 31 meets the distribution requirement for Group 3; it counts towards a major in History.
Fall semester. Saller.

32. The Roman Republic and Early Empire.
A study of the Roman world in the period 300 B.C.-A.D. 38. The following subjects will be dealt with in detail: (1) The evolution of the republican constitution, (2) Rome's wars of expansion and acquisition of empire, (3) The Roman Revolution, (4) The Augustan Principate, (5) The Julio-Claudian Dynasty, (6) Art, Literature, and Thought.

Students will be required to read the pertinent original sources in translation as well as a selection of modern viewpoints. There is no prerequisite. Classics 32 meets the distribution requirement for Group 3, and counts towards a major in History.
Spring semester. Saller.

33. Greek Literature in Translation.
The works studied in this course range in time from Homer to Plato and Aristotle and include selected masterpieces of epic, lyric and elegiac, and dramatic poetry, history and philosophy. Lectures on the historical and

cultural context supplement class discussion.
Not given in 1980-81.

35. Latin Literature in Translation — Classical and Mediaeval.

The works studied in this course range in time from the age of the Roman Republic to the twelfth century after Christ. They include the major authors of the classical period, St. Jerome and St. Augustine from the Latin Fathers, and from the Middle Ages, Boethius, Prudentius, the chief figures of the Carolingian Renaissance, and the writers of Mediaeval Latin hymns and secular poetry. The course is given in alternate years.
Not given in 1980-81.

36. Classical Mythology in Literature and Art.

A study of selected myths in works of Greek and Latin literature ranging from Homer's *Odyssey* to the *Metamorphoses* of Ovid and Apuleius. Attention is given not only to works of art inspired by mythical figures and cycles, but also to ancient sites connected with them.
Fall semester. North.

38. Greek and Roman Literary Criticism.

A study of ancient literary criticism from its beginnings in Presocratic philosophy and Old Comedy to its latest stages in the writings of the Church Fathers, especially St. Augustine. Emphasis will be placed on such major critics as Plato, Aristotle, Dionysius of Halicarnassus, Demetrius, 'Longinus', Quintilian, Cicero, and Horace. Topics to be considered include the social and historical context of ancient criticism in its principal stages, and the influence of ancient theories on certain schools of Mediaeval and Renaissance criticism.
Fall semester, Not given 1980-81. North.

42. Greece in the Fifth Century B.C.

An intensive study, chiefly on the basis of primary sources, of Athens and the Greek world from the reforms of Cleisthenes to the end of the Peloponnesian War. Special emphasis is placed on the political, social, and economic institutions of the Athenian democracy and on the problems of the Delian League, both internal and in its relation to the Greek and non-Greek world. Classics 42 counts towards a major in History.
The course is normally given in alternate years.
Prerequisite: Classics 31 or its equivalent.
Spring semester. Not given in 1980-81.

44. The Roman Empire.

A detailed study, using primary sources, of the political, economic, social, and cultural history of the Roman world from the death of Nero in A.D. 68 to the death of Constantine in A.D. 337. Classics 44 counts towards a major in History.
Prerequisite: Classics 32 or its equivalent.
Spring semester. Saller.

45. Greek Political Theory.

A study of Greek political concepts and institutions as a background to the political thought of Thucydides, Plato, and Aristotle, on which the major attention of this course is focused.
Spring semester. Ostwald.

46. An Introduction to Archaeology.

This course imparts a knowledge of techniques and procedures applicable to archaeological study in any part of the world. Specific examples and problems are drawn in the main from classical archaeology, with emphasis on a particular period (e.g. Bronze Age, Hellenistic, Etruscan, etc.).
Spring semester. Staff.

81. The Ancient Theatre.

A representative selection of Greek and Roman drama, both tragedy and comedy, will be read in translation, together with the *Poetics* of Aristotle, and there will be a study of anceint dramatic production and the physical remains of Greek and Roman theatres.
Given in alternate years.
Fall semester. Not given in 1980-81. North.

91. Special Topics.

Readings selected to fit the needs of individual seniors in preparation for their comprehensive examination in Ancient History.
Spring semester. Staff.

93. Directed Reading.

A program of independent work under the supervision of the instructor. It is open only to advanced students and may be taken only with the consent of the Department chairman.
Staff.

95. Attachment.

Additional, independent work attached to an advanced course, normally used to prepare for

an external examination, but available also to Course students for the purposes described on page 68 (Formats of Instruction).
Staff.

SEMINARS

102. Roman Historians.
This seminar combines a survey of Latin historical writing to the end of the Silver Age with intensive study of selected books of Livy and Tacitus, both as examples of Roman historiography and as sources for Roman history.
Spring semester. Saller.

103. Latin Epic.
Virgil's *Aeneid* against the background of earlier and later Latin Epic poetry (Lucretius, Lucan).
Spring semester. North.

104. Satirical Writing in the First Century After Christ.
A study of the *Satires* of Juvenal, selected epigrams of Martial and the *Satyricon* of Petronius. Special attention will be given to the writings of these authors as illustrations of the social structure and of the literary and intellectual movements of the early empire.
Spring semester. Saller.

105. Cicero.
A study of the political and forensic speeches of Cicero and of his personal correspondence as sources for the political and constitutional history of the final years of the Roman Republic. Attention is also paid to Ciceronian prose style as exemplified in his letters and orations.
Fall semester. Saller.

107. Horace: Lyric and Hexameter Poetry.
The seminar emphasizes the *Odes* and *Epodes* and their place in the tradition of Greek and Roman lyric poetry. Attention is also given to the *Satires* and *Epistles*, especially the *Ars Poetica*, and to their importance for the history of satire and literary criticism. An effort is made to grasp the totality of Horace's achievement in the context of the Augustan Age.
Fall semester. North.

111. Greek Philosophers.
This seminar is devoted mainly to the study of Plato, which is supplemented by study of the pre-Socratic philosophers and of Aristotle and the Hellenistic schools. The orientation of the seminar is primarily philosophical, although the literary merits of the Greek philosophers receive consideration.
Fall semester. Ostwald.

112. Greek Epic.
This seminar will study primarily Homer's *Iliad*. Selections from Hesiod and Apollonius will also be read, with some attention to the development of Greek epic.
Spring semester. Rose.

113. Greek Historians.
This seminar is devoted to a study of Herodotus and Thucydides, both as examples of Greek historiography and as sources for Greek history.
Fall semester. Ostwald.

114. Greek Drama.
The whole body of extant Greek tragedies and comedies is studied, with a careful reading in the original language of one play by each of the major dramatists.
Spring semester. Rose.

115. Greek Elegiac and Lyric Poetry.
The whole body of extant Greek elegy and lyric is studied, with attention to the political and social background, and to the relation of these literary types to epic and dramatic poetry.
Fall semester. North.

Economics

ROBINSON G. HOLLISTER, JR., Professor (part-time)
HOWARD PACK, Professor
FREDERIC L. PRYOR, Professor (part-time)
BERNARD SAFFRAN, Professor and Chairman
GEORGE B. ASSAF, Visiting Assistant Professor
MARK KUPERBERG, Assistant Professor
LINDA LIM, Assistant Professor†
DAVID L. MUETHING, Assistant Professor
LAURENCE S. SEIDMAN, Assistant Professor
RICHARD H. SPADY, Assistant Professor††
CHARLES F. STONE, III, Assistant Professor††
DAVID F. WEIMAN, Assistant Professor
NOEL J.J. FARLEY, Visiting Lecturer**§

The courses in economics are designed: first, to acquaint the student with the institutions and processes through which the activity of producing, exchanging, and distributing goods and services is organized and carried on; second, to train the student in the methods by which these institutions and processes may be analyzed; and third, to enable the student to arrive at informed judgments concerning relevant issues of public policy.

Economics 1-2 is a prerequisite to all other work in the Department except Economics 3 and Economics 4. All students intending to major in Economics are strongly advised to take Economics 4 or the equivalent statistics course in the Mathematics department in order to prepare for upper level courses and seminars; some seminars will assume a knowledge of statistics. Majors in Course are normally expected to take Economics 20 and 59 *before* their senior year. Majors in the External Examination (Honors) program must take Economics 103 and are strongly advised to take in addition either Economics 102 or Economics 59. Students intending advanced work in applied economics and those intending to go to law or business schools will find Economics 3 useful preparation.

Knowledge of the materials covered in an elementary calculus course is also required for a major in Economics. For students intending to do graduate work in Economics, a strong background in mathematics is virtually essential. If at all possible, such students should take Mathematics 5 and 11 or the equivalent of these courses. Mathematics 15 and 22 would also be useful for those intending to focus on the more technical aspects of economics.

1, 2. Introduction to Economics.

This course is designed both to afford the general student a comprehensive survey and to provide students doing further work with a foundation on which to build.

The first semester course describes the organization of the economic system and analyzes the allocation of resources, the distribution of income, and international economic relations. Students must take Economics 2 to receive credit for Economics 1.

The second semester course deals with the problems of inflation, unemployment, monetary and fiscal policy, and the determination of national priorities.

3. Accounting.

The purpose of this course is to equip the student with the rudiments of accounting needed for advanced work in business finance, banking, taxation, and public regulation. (This course does not satisfy the distribution

† Absent on leave, 1980-81.
** Fall semester, 1980.
§ Bryn Mawr-Haverford-Swarthmore faculty exchange program.

requirements as outlined previously in this catalogue.)
Spring semester.

4. Statistics for Economists.

All Economics majors are strongly advised to take this course (preferably in their sophomore or junior year) to prepare them for advanced work in the discipline. The first half of the course covers basic probability, random variables, sampling, estimation and hypothesis testing; the second half, simple and multiple regression. No mathematics prerequisite except high school algebra; the course includes a self-contained introduction to calculus and matrix algebra. Course work will include some problem solving using the computer.
Prerequisites: Economics 1 and 2.
Fall semester. Muething.

5. Economic Policy Analysis.

This course analyzes major policy issues: (1) The trade-off between efficiency and equality in a market economy; (2) Policies to raise low incomes (the negative income tax; capital formation); (3) National health insurance; (4) Environment, energy, and resource conservation; (5) Inflation and unemployment.
Prerequisites: Economics 1 and 2.
Fall semester. Not offered 1980-81. Seidman.

11. Economic Development.

Requisites for the economic development of underdeveloped countries. Obstacles to development. Strategy and tactics of development policy.
Spring semester. Pack.

12. Econometrics.

A survey of fundamental econometric methods emphasizing application. Some empirical work will be required.
Prerequisite: Economics 4.
Spring semester. Staff.

14. Financial Markets and Institutions.

Economic theory of the stock and bond markets. Evaluation of investments and portfolio decisions from the viewpoint of the individual. Investment and financial decisions from the viewpoint of the corporation. Function and regulation of various financial intermediaries. Impact of government regulation and taxation on financial markets. Selected current topics in the economics of financial markets.
Spring semester. Muething.

20. Economic Theory.

Microeconomic theory at an intermediate level. Determination of prices in theory and in practice. Distribution of income. Economic welfare aspects of various market structures. Other selected topics.
Fall semester. Muething and Pack.

21. Industrial Organization and Public Policy.

Optimality and the price system; theories of the firm; market structure; the causes of market failure and alternative policy responses; antitrust, regulation and public enterprise.
Fall semester. Not offered 1980-81.

22. Public Finance.

Analysis of the effects of tax policies and government expenditure programs on the distribution of income and economic efficiency. Special topics will include tax reform and capital formation, consumption vs. income taxes, social insurance (social security, national health insurance, unemployment compensation), general equilibrium tax incidence, public goods, externalities (environmental pollution), tax policy and inflation, and optimal taxation.
Fall semester. Seidman.

24. Topics in the Economics of Industry.

Quite similar to Economics 21, but placing more stress on governmental policies toward the firm and the subsequent reactions on firm decision-making.
Fall semester. Assaf.

25. Labor Problems and Manpower Policy.

The structure and behavior of labor markets, issues in labor relations, the development of manpower, the role of unions, employers and government.
Fall semester. Not offered 1980-81.

26. Social Economics.

The extent, consequences, and causes of poverty and economic inequality; an appraisal of reforms in income support programs, medical care, education, housing, and rural

and ghetto development; the economics of discrimination.
Not offered 1980-81.

27. Government Regulation of Industry.

The economics of the "new" regulation: occupational safety and health, affirmative action, pollution, auto insurance, consumer product safety, pension plans, restrictions on industrial location and mobility, etc. In each case the economic rationale for current and proposed regulation is examined in the context of the theory of market failure and evaluated in terms of its effects upon economic efficiency and social equity. In certain cases, "optimal" schemes devised by economists which differ greatly from current policy will be considered. Throughout, the emphasis is on the theory of government intervention and its implementation as opposed to current institutional failures.
Not offered 1980-81.

30. The International Economy.

The course consists of a brief introduction to the historical development and institutional structure of the international economy and an introduction to the theory of trade, commercial policy, and balance of payments adjustment. These tools are used to analyze contemporary international economic problems; tariffs and non-tariff barriers, common markets, multinational corporations, international oil, gold, inflation, and the future of the international monetary system.
Fall semester. Pryor.

31. Comparative Economic Systems.

Analysis of methods by which economic systems can be compared; studies of empirical comparisons according to many criteria of nations in East and West; case studies of the Soviet Union, China, Yugoslavia and other nations.
Fall semester. Pryor.

41. Urban Economics.

This course examines the economic structure and development of American urban economics. Topics covered include housing, transportation, urban renewal, local government finance, and pollution.
Spring semester. Not offered 1980-81.

47. Marxist Political Economy.

A study of Marxist economics and political theory with particular attention to general problems of historical materialism. Primary emphasis in the reading is placed on the works of Marx, Engels, and Lenin; however, some time is also devoted to the background of Marxist thought as well as the development of Marxist theory in the present era.
Prerequisites include two semesters of either Political Science or Economics.
Spring semester. Not offered 1980-81.

49. American Economic History.

(Also listed as History 49). The course of American economic growth, from the colonial era onwards, is examined; further, the sources of that growth are explored with an attempt to weigh the contribution of various causal factors which historians and economists have identified, including the changing composition of inputs, methods of production and the changing social and political environment. The evolving relationship of growth to equity and efficiency will also be considered.
Fall semester. Weiman.

54. Energy Policy Issues.

(Cross-listed as Engineering 57.) An exploration of government policy toward energy resource development and implementation of new energy technologies. Topics include OCS oil, leasing, western coal and oil shale development, energy price regulation, nuclear safety and safeguards, solar energy development and end-use conservation.
Enrollment by permission of instructor; suggested preparation includes Economics 1 & 2, Political Science 2, and Engineering 3 or a mathematics course.
Spring semester. Not offered 1980-81.

56. Operations Research.

(Also listed as Engineering 56.) The principles of operations research as applicable to defining optimum solutions of engineering and financial problems as an aid to managerial decision making. Probability and probability distributions, reliability, random number simulation, queuing theory, linear programming, dynamic programming, allocation and transportation theory. The working principles of engineering economy are introduced and

combined with operations research topics. Normally for junior and senior students.
Spring semester.

58. Health Policy.

(Also listed as Political Science 58.) Analysis of government policy toward health care and public health, its impact upon institutions and resource allocation, and major alternatives for action. Central topics are the organization of health care delivery (roles and views of physicians, nurses, administrators, patients and insurers); the interplay of federal, state, and local governments, quasi-public authorities, and interest groups; technical and political aspects of health insurance alternatives; health manpower (medical and nursing schools, paraprofessionals); biomedical research programs. Students wishing to take this course should consult in advance with the instructors. Prior work in at least two of the following will be helpful: Economics 1-2, 4, 26; Political Science 2, 51; Mathematics 1; Engineering 4, 32.
Spring semester. Hollister and Smith.

59. Macroeconomic Theory and Stabilization Policy.

The theory of the determination of the level and composition of aggregate output, employment, prices and intrest rates. Analysis of conflicting views of the relationship between inflation and unemployment and of the proper role of government stabilization policy.
Spring semester. Kuperberg.

62. Economics, Justice, and Law.

(Also listed as Political Science 62.) Exploration of the premises behind the use of utilitarian constructs in the analysis of public policy issues. Examination of the appropriateness of the utilization of economic methodology through an intensive study of issues in law and distributive justice.
Fall semester. Kuperberg and Beitz.

67. Social Insurance and Welfare Policy.

(Also listed as Political Science 67.) The principal American policies and programs dealing primarily with relief of poverty and economic insecurity, and the prospects and options for reform in this field. Topics include: Social Security, national health insurance, unemployment compensation and welfare reform. The various public objectives and methods of income support and related social services, as well as certain contextual or alternative programs and regulatory policies. Conceptions of "welfare"; economic, social, political, and administrative or professional considerations in policy; historical and comparative perspectives. Intended as a single- or double-credit seminar for students in the Public Policy Concentration and open for single credit to others who have taken appropriate Public Policy prerequisites, on which consult the Catalogue and, as to exceptions, one of the instructors.
Spring semester. Gilbert and Seidman.

71. Management of Non-Profit Organizations.

The course will examine the distinctive nature of non-profit organizations: social and community agencies and higher education will be used as examples. Emphasis will be placed on management approaches in the general areas of fiscal and personnel administration.
Prerequisite: Accounting.
Fall semester. Landry.

73. History of Economic Thought.

A critical evaluation of the thought of major economic thinkers of modern times, within the context of the changing economic systems in which they lived: the classical economists (Smith, Malthus, Mill and Marx); the neoclassical economists (Marshall); the post-neoclassicals (Kalecki, Keynes, Steindl and Sraffa); the modern "orthodox" school (Samuelson and others) and its challengers (the Cambridge School and the radical or neo-Marxian school).
Spring semester. Weiman.

81. Economies of the Middle East.

Study of selected Middle Eastern economies. Focus on different economic development strategies of countries, some with limited and others with substantial natural resource bases. Investigation of agricultural and industrial policies, issues in natural resource pricing, and technology absorption problems.
Fall semester. Pack.

82. Law and Economics.

Related to Economics 62 but can be taken independently. Economic analysis of property rights and the ways in which legal issues can be handled with economic analysis. Examination of specific policy problems including liability

laws, product safety legislation, workman's compensation and work injuries, medical malpractice laws, drug safety legislation, crime control, and racial and sexual discrimination.
Spring semester. Assaf.

91. Political Economy of Macroeconomic Policy.
(Also listed as Political Science 91.) Focus on the congressional and administrative processes by which macroeconomic policy is formulated, approved, and implemented.
Spring semester. Seidman and Rubin.

SEMINARS

101. Public Finance.
Analysis of the effects of tax policies and government expenditure programs on the distribution of income and economic efficiency. Special topics will include tax reform and capital formation, consumption vs. income taxes, social insurance (social security, national health insurance, unemployment compensation), general equilibrium tax incidence, public goods, externalities (environmental pollution), tax policy and inflation, and optimal taxation.
Fall semester. Seidman.

102. Economic Stability and Growth.
The theory of cyclical fluctuations and secular growth. Money and banking. Monetary and fiscal policy. Wage-price pressures and the control of inflation.
Spring semester. Kuperberg.

103. Economic Theory.
Contemporary theory: price determination, the functional distribution of income, the level of employment. Evaluation of theory in the light of simplifying assumptions and empirical evidence. The relevance of theory to socio-economic problems.
Both semesters. Saffran.

105. International Economics.
Theory and policy of international economic relations. The theory of international trade and balance of payments adjustment. Commercial policy of tariffs and non-tariff barriers. Common markets, customs unions, and regional economic integration. Multinational enterprise and economic imperialism. The world monetary system, international inflation, and the international economics of oil.
Fall semester. Farley.

106. Comparative Economic Systems.
Analysis of methods by which economic systems can be compared; study of resource allocation and growth in socialist, capitalist, and mixed economies; case studies of the U.S.S.R., Yugoslavia, China, France, and other nations; examination of special problems in economic planning.
Fall semester. Pryor.

107. Labor and Social Economics.
Economic analysis of the organization of labor and labor markets; education, medical care, housing, discrimination. Determinants of wages and income inequality, government policies with respect to labor relations, health, education and welfare.
Spring semester. Hollister.

108. Econometrics.
Econometric theory and empirical studies. An empirical research paper is required.
Prerequisites: Mathematics 11 and Economics 103.
Spring semester. Staff

109. Economic Development.
An examination of the problems of economic development and growth in low-income countries, with attention to both historical experience and current issues of development policy. Techniques of economic planning and instruments of policy will be studied. Emphasis will be placed upon case studies of individual countries, and each student will prepare a research paper in considerable depth.
Spring semester. Pack.

110. Urban Economics.
This seminar will deal in depth with the structure and development of American urban

economies. Topics covered will include housing, transportation, urban renewal, local government finance, and pollution. Methodological as well as substantive issues will be discussed.
Spring semester. Not offered 1980-81.

111. Industrial Organization and Public Policy.

Applications of theoretical and empirical analysis to major issues in industrial economics: optimality and the price system; theories of the firm; market structure; the causes of market failure and alternative policy responses.
Spring semester. Not offered 1980-81.

112. Mathematical Economics.

Review of static optimization theory; theory of consumption and production from a dual point of view; elementary approaches to the existence, stability, and optimality of general equilibrium; additional topics of student interest as time permits.
Spring semester. Not offered 1980-81.

113. Issues in Labor Economics.

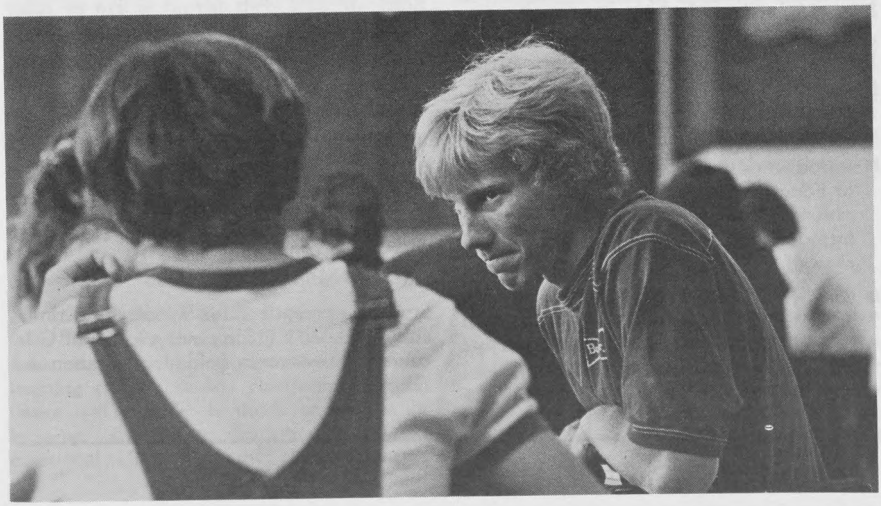
Economic analyses of labor markets and labor organization; employment and unemployment; wage determination and income inequality; education; discrimination; women in the labor force; labor in multinational corporations; labor in underdeveloped countries; the labor process and labor productivity. Other topics depending on student interest, such as U.S. labor history, labor market institutions and labor practices in other industrialized countries.
Fall semester. Not offered 1980-81.

114. History of Economic Thought.

A critical evaluation of the thought of major economic thinkers of modern times, within the context of the changing economic systems in which they lived: the classical economists (Smith, Malthus, Mill and Marx); the neoclassical economists (Marshall); the post-neoclassicals (Kalecki, Keynes, Steindl and Sraffa); the modern "orthodox" school (Samuelson and others) and its challengers (the Cambridge School and the radical or neo-Marxian school).
Spring semester. Weiman.

115. American Economic History.

Economic development of the United States from the colonial period to the New Deal. Focus on the patterns of economic growth, the quantitative expansion of the economy, the changing institutional and social structure. Attention to the culminating economic and social crises of each stage of development and the economic roots of these crises.
Spring semester. Weiman.



Education

EVA F. TRAVERS, Assistant Professor and Program Director
ROBERT J. GROSS, Assistant Professor†
ANN RENNINGER, Lecturer

The Program in Education has three purposes: to expose students to issues in education from a variety of disciplinary perspectives, to provide a range of field experiences for students who wish to explore their aptitude and interest in teaching, counseling or research in an educational setting, and to prepare students to be certified for entry into public school teaching. Substantive courses in the Program in Education are intended to be integral to the College's academic offerings. The Program's most important goal is to help students learn to think critically and creatively about the process of education and the place of education in society. To this end, both its introductory and upper level courses necessarily draw on the distinctive approaches of Psychology, Sociology, Political Science, Philosophy and History. Because students major in one of the traditional disciplines, courses in Education offer both an opportunity to apply the particular skills of their chosen field to a new domain and to interact with others whose disciplinary approaches may differ significantly from their own.

A competency-based program for preparing secondary teachers is offered for students who seek public school certification from the Commonwealth of Pennsylvania. Competency is judged by an interdisciplinary committee of the faculty whose members have established criteria for certification in Biology, Chemistry, English, French, German, Mathematics, Russian and Social Studies. Individual programs are developed in conjunction with departmental representatives and members of the Education staff. There is no major in Education. All students seeking certification must meet Swarthmore College's general requirements for course distribution and a major.

REQUIREMENTS FOR TEACHER CERTIFICATION

Students planning to seek secondary certification should take Introduction to Education, Educ. 14, by the end of their Sophomore year and enroll for Practice Teaching and Seminar, Educ. 16 (a double credit course), no earlier than the Spring Semester of their Junior year. In addition, they must complete the following sequence of courses:

- Introduction to Psychology, Psychology 3, or Educational Psychology, Educ. 21 (Educational Psychology required in place of Introduction to Psychology for students in class of '82 and thereafter).
- Child Development,Psychology 39; Adolescence, Educ. 23; or Psychological Anthropology, Sociology-Anthropology 104 (Psychological Anthropology will not fulfill this requirement for students in the class of '82 and thereafter).
- An additional course from the following:
  a. Educational Psychology, Educ. 21
  b. Adolescence, Educ. 23
  c. Counseling: Principles and Practices, Educ. 25
  d. Education and Society, Educ. 47
  e. Education in America, Educ. 52
  f. Political Socialization and Schools, Educ. 61
  g. Urban Education, Educ. 81
  h. Special Topics, Educ. 91

Students preparing for certification must attain at least a grade point average of C in courses in their major field of certification and

† Absent on leave, 1980-81.

a grade of C+ or better in Introduction to Education in order to undertake Practice Teaching. In addition, students must be recommended by their major department and by their cooperating teacher in Introduction to Education. Placement of students in schools for Practice Teaching is contingent on successful interviews with members of the Education Program staff and appropriate secondary school personnel.

At present Swarthmore College is not authorized by the Commonwealth of Pennsylvania to certify elementary teachers. However, students taking courses in the Education Program have an opportunity to concentrate their field work in an elementary setting and may do practice teaching for credit in an elementary school. Placements for students who do not desire certification are also available in a variety of special education or counseling settings.

14. Introduction to Education.

A survey of issues in education within an interdisciplinary framework. In addition to considering the impact of individuals such as Dewey, Skinner and Bruner, the course will explore some major economic, historical and sociological questions in American education and discuss alternative policies and programs. The course will give students an opportunity to determine their own interest in preparing to teach, as well as furnish them with first-hand experience in current elementary and secondary school practice. Field work is required.
Each semester. Staff.

16. Practice Teaching.

Supervised teaching in either secondary or elementary schools, with an accompanying seminar for curriculum and methods. Double credit. (Single credit practice teaching may be arranged for individuals not seeking certification.)
Each semester. Travers and Renninger.

21. Educational Psychology.

(also listed as Psychology 21). This course will focus on the psychological dimensions of the learning process in the classroom. Specific issues will include: methods and styles of learning; student motivation, social and emotional climate of the classroom, role problems of teachers, and individual diagnosis and assessment.
Fall semester. Renninger.

23. Adolescence.

(also listed as Psychology 23). This course will review recent studies of adolescent development as a basis for establishing a theoretical framework. These, in turn, will be brought to bear on adolescent behavior, especially in schools and other social institutions. There will be an emphasis on the relationship between adolescence as a stage of development and the curriculum and programs of the institutions serving adolescents. The course will include a component of field observation and research.
Spring semester. Renninger.

25. Counseling: Principles and Practice.

An introductory course focusing on theories, techniques and issues in school and agency counseling. Field work, guest lectures, role playing and analysis of case studies will provide practical information and experience. Recommended for students considering graduate programs in educational counseling or those planning to teach or do youth work in an agency setting. Enrollment limited.
Not offered 1980-81. Dickerson.

47. Education and Society.

(also listed as Sociology and Anthropology 47). Classical views of education and society including Dewey and Durkheim. Comparative study of the functions of schools from the perspective of sociology and anthropology. Among the topics to be discussed are the relation of educational institutions to other sectors of society, and the question of alternatives to schooling in both modernizing and "post-industrial" societies.
Fall semester. Staff.

48. Sociology of Higher Education.

(also listed as Sociology-Anthropology 48). This course will explore the theory and practice of higher education from a sociological point of view. Students, faculty, curriculum, governance and decision-making, nontraditional approaches, and the college and university as key institutions in modern industrial society will be the focus of study. Field observation and

interviewing at one of the many institutions in the Greater Philadelphia area will represent an important component of the course.
Staff.

52. Education in America.

(also listed as History 52). A history of primary, secondary and higher education in America from the European and colonial orgins to the present. The course will consider both theory and practice within the context of American society and culture, and in relation to other agencies of socialization.
Prerequisite: Introductory level History course.
Not offered 1980-81. Bannister.

64. Political Socialization and Schools.

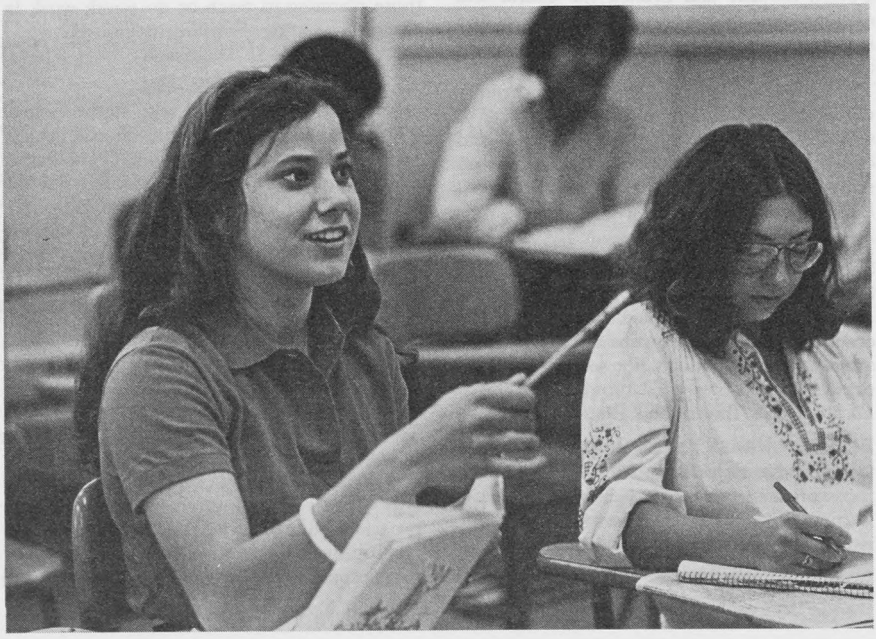
(also listed as Political Science 64). The course will consider the development of political concepts, attitudes and behavior in students through the period of formal education. The inter-related but often inconsistent influences of family, school, peers, media and critical events in the socio-political system will be examined; special emphasis will be given to the formal and informal messages of schooling. Disillusionment and dissent, as responses to the events of the past decade, will be explored. The course will include a component of field research.
Not offered 1980-81. Travers.

81. Urban Education.

The course will focus on topics of particular significance to urban educators, including desegregation, school finance, compensatory education, curricular innovation, community control, bilingual education, and unionization, The current situation in urban schools will be viewed in hisotrical and sociological perspective. Field work is required.
Spring semester. Travers.

91. Special Topics.

With the permission of the instructor, qualified students may choose to pursue a topic of special interest, which for thorough investigation will usually require field work as well as research.
Each semester. Staff.



Engineering

CARL BARUS, Professor
DAVID L. BOWLER, Professor
H. SEARL DUNN, Professor and Chairman
M. JOSEPH WILLIS Professor
EDWARD N. KRESCH, Associate Professor
NELSON A. MACKEN, Associate Professor†
MAURICE F. ABURDENE, Assistant Professor
ARTHUR E. McGARITY, Assistant Professor
FREDERICK L. ORTHLIEB, Assistant Professor

The professional practice of engineering requires skill and resourcefulness in applying scientific knowledge and mathematical methods to the solution of technical problems of ever-growing complexity. In addition, the role of engineering in our society demands that the engineer recognize and take into account the economic and social factors that bear upon all important technical problems. The successful engineer must, therefore, possess a thorough understanding of social and economic forces, and have a deep appreciation of the cultural and humanistic traditions of our society. Our program supports these needs by offering the student the opportunity to acquire a broad technical and liberal education. The structure of the Department's curriculum permits engineering majors to take almost forty percent of their course work at the College in the humanities and social sciences. With careful planning it is possible for a student to acquire a double major with two degrees, the Bachelor of Science in Engineering and the Bachelor of Arts in a second academic area in a four-year course of study.

The Department's physical facilities include a wide range of laboratories for general instruction and individual student projects in the areas of electronics, system control, communications, instrumentation, strength of materials, solid and structural mechanics, fluid mechanics, thermodynamics, soil mechanics, and environmental diagnostics. Supporting these laboratories with on-line data acquisition and graphical display is the Department's computer laboratory which is equipped with a PDP 11/40 system as well as with smaller digital and analog computers. Excellent shop facilities for both metal- and woodworking are available for student use.

The overall plan leading to the degree of Bachelor of Science with a major in Engineering is accredited by the Accreditation Board for Engineering and Technology.

Courses Available to Non-Majors

The Department offers courses in computer education for students throughout the College; courses numbered 21 through 26 serve this purpose. Although Mechanics (6) is primarily for prospective majors, other interested students, particularly those interested in preparing for a career in architecture, are encouraged to enroll. Problems in Technology (3,4) is designed chiefly for students not contemplating further work in engineering or the natural sciences. Public Technology Project (32) is a group study project intended for an interdisciplinary enrollment. Operations Research (57), and Environmental Engineering (64) will also appeal to many students majoring in other departments. Students majoring in the physical sciences or mathematics frequently enroll in advanced engineering courses.

Students may minor in the External Examination (Honors) Program in the Engineering

† Absent on leave, 1980-81.

Department by taking appropriately related advanced engineering courses as preparation for external examinations. Generally the advanced engineering courses require one or more introductory courses as prerequisites.

Program for Engineering Majors

The general departmental requirements fall into three categories: successful completion of at least (i) twelve engineering courses, (ii) four courses in the sciences including General Physics 3 and 4, to be taken in the freshman year, and (iii) four courses in mathematics, including Math 5 and 11 to be taken in the freshman year and Math 22, normally taken in the sophomore year. The two unspecified science courses in category (ii) and the mathematics course in category (iii) may be chosen to complement the student's overall program of study; in general, the Department recommends Introduction to Chemistry (1, 2) and Linear Algebra (12) or Mathematical Statistics (15) or Differential Equations (30).

Within the Department, the following core courses are required of all students: Mechanics, Physical Systems Analysis I and II, Experimentation for Engineering Design, Thermofluid Mechanics, and Engineering Design. The first four courses are normally taken in the freshman and sophomore years: Mechanics in the second semester of the freshman year, Physical Systems Analysis I in the first semester of the sophomore year, and the remaining two in the second semester of the sophomore year. In special circumstances, however, students with adequate preparation in mathematics and physics can begin the engineering curriculum as late as the second semester of the sophomore year and still complete all of the core requirements and elective work in the Department. The course Engineering Design, the culminating experience for engineering majors, is taken in the second semester of the senior year.

In consultation with his or her advisor, each student constructs a program of advanced work in the Department. These programs, normally consisting of six courses, are submitted to the Department when the student formally applies for a major in engineering during the spring semester of the sophomore year.

The program constitutes the student's elected *field of concentration* which may or may not conform closely to the traditional areas of engineering specialization, i.e. civil, electrical, mechanical, etc. For non-traditional plans for advanced work, the Department requires a coherent program that, in its judgment, meets the student's educational objectives.

Several suggested fields of concentration follow:

(1) General civil engineering: Mechanics of Solids, Structural Theory and Design, Soil Mechnanics Theory and Design, Fluid Mechanics, and Operations Research. Students with a particular interest in environmental topics may replace several of the above courses with Environmental Engineering, Environmental Policy, or Solar Energy Systems.

(2) General electrical engineering: Electronic Circuit Analysis and Design I and II, Electromagnetic Theory, Communication Systems, and Control Theory and Design. Students having an interest in digital systems might replace one or more of these courses with Digital Logic, Computer Organization, Computer Systems, or Microprocessor Laboratory Applications.

(3) General mechanical engineering: Mechanics of Solids, Thermodynamics, Engineering Materials, Fluid Mechanics, Heat Transfer, and Control Theory and Design. Students with a special interest in the field of energy may wish to include Solar Energy Systems or Energy Policy.

(4) Computer engineering and general computer science: Digital Logic, Computer Organization, Digital Computers II, Computer Systems, and Microprocessor Laboratory Applications. Students with an interest in computer hardware may include Electronic Circuit Analysis and

Design I and II, or Control Theory and Design. Courses in mathematics can be used to broaden the theoretical foundation of the program.

ENGINEERING

3, 4. Problems in Technology, I and II.

Designed primarily for those not planning to major in science or engineering, this course is intended to provide some depth of understanding of technology and its impact by examining in each semester a particular technology. Technical considerations underlying policy issues will be stressed. Examples of semester topics are: aspects of the energy problem, satellite communications, managing environmental hazards, and developments in data processing. A strong background in high school mathematics is assumed. Includes laboratory. Credit may be given for either semester, or both.

3 will be offered in 1980-81, but not 4. Barus.

6. Mechanics.

Fundamental areas of statics and dynamics. Elementary concepts of deformable bodies including stress-strain relations, beam, torsion, and long column theory. Laboratory work is related to experiments on deformable bodies. Prerequisite: Physics 3 or equivalent.

Spring semester. Orthlieb.

11, 12. Physical Systems Analysis I and II.

These courses are devoted to the study of physical phenomena which may be represented to a good degree of approximation by a linear, lumped-parameter model. E11 (fall semester) is oriented mainly toward electrical devices and the development of mathematical techniques for the analysis of their linear behavior. E12 (spring semester) is more concerned with mechanical, thermal and fluid systems, but emphasis throughout both courses will be placed upon the unity resulting from the common mathematical representation and analysis of diverse physical systems. The content of E11 is: Behavior of electrical circuits; natural and forced transient response, steady-state harmonic excitation. Modeling of active devices, operational amplifiers, and their use in circuit design. Introduction to the Fourier series and Laplace transform. Pole-zero concepts, notions of stability, and energy considerations. E12 will be devoted to: multi-degree of freedom mechanical, electromechanical, thermal and fluid systems. Transfer function and matrix descriptions of compound systems, the eigen-value problem and state space techniques. Mechanical systems in two and three dimensions, energy methods, coupled modes of motion. Transition from many degree of freedom systems to continuous systems; the Fourier integral with applications to wave motion.

Credit may be given for either semester, or both. Staff.

14. Experimentation for Engineering Design.

Theories of experimentation and measurement are presented and are related to engineering design and research projects. Lectures present probability theory and its applications in experimentation. Topics include random variables, probability distributions, measurement errors, random noise, system reliability, statistical analysis of experiments and simulated experiments, and decision making with experimental results. The laboratory section treats the analysis of measurement systems and involves the experimental determination of measurement system parameters.

Prerequisites: E11 and E12 (taken concurrently)

Spring semester. McGarity.

21. Digital Logic.

An introduction to the theory and design of digital logic circuits. Following a discussion of number systems and Boolean algebra, minimization and realization techniques are studied for combinational systems. The latter part of the course will be concerned with the treatment of sequential systems. Switching devices will be characterized only as to their terminal behavior and no consideration will be given to the physical basis for their operation. The course is intended for students with a good background in basic mathematics through algebra. Includes laboratory.

Fall semester. Kresch, Bowler.

22. Computer Organization.

A study of the ways in which the functional units of a typical digital computer may be interconnected. Hardware implementation of registers, counters, adders and the functional units themselves. Micro-programmed control. Characteristics of the several types of memory. Includes laboratory.
Prerequisite: E21.
Spring semester. Kresch, Bowler.

23. Digital Computers I: Programming and Applications.

An introduction to problem solving by computers. A high-level computer language will be taught with a brief introduction to an assembly language. Examples of computer applications in education, industry, commerce, and government will be presented. Extensive use of the Computing Center facilities.
Prerequisite: None; intended for non-science and non-engineering majors.
Fall semester. Bowler, Aburdene.

24. Digital Computers II: Advanced Computer Applications.

Advanced features of programming languages; use of tapes and disks, data structures, sorting and searching algorithms, file processing, operating systems, and introduction to simulation languages and statistical packages.
Prerequisite: E23, or equivalent. Intended for non-science and non-engineering majors.
Spring semester. Aburdene.

25. Computer Systems: Organization and Programming.

An introduction to the organization and system design of a small computer. Machine language, addressing techniques, assembly language, and macro instructions. Re-entrant and recursive programming techniques. Input/output programming. Operating systems and system interrupts. Extensive use of computer laboratory.
Prerequisites: E23, or Mathematics 7 or equivalent.
Fall semester. Aburdene.

26. Microprocessor Laboratory Applications.

The study and selection of microprocessor architecture, hardware modules, and interfaces for use in laboratory instrumentation. The laboratory exercises are designed for the development of a working microprocessor-based system.
Prerequisite: E25 or equivalent. Intended for engineering and science majors.
Spring semester. Aburdene.

32. Public Technology Project.

An interdisciplinary group project. The class will be constituted as a study panel charged with assessing various aspects of a particular public-service technology. The group will jointly prepare a report setting forth its findings and recommendations. Examples of the type of technology to be investigated are new energy systems, transportation systems, automated health care, waste management, applications of communication satellites, water management in the west, etc. The class will meet weekly in seminar format.
Prerequisite: completion of science requirement.
Offered in either semester when staffing permits. Barus.

36. Solar Energy Systems.

Fundamental principles in the analysis and design of systems which collect, store, and use the direct and indirect forms of solar energy. Examples of current solar technology are used as illustrations. Stochastic and deterministic mathematical models are used to describe the performance of components and systems. Cost functions are developed for use in economic assessments. Techniques for system optimization are discussed.
Prerequisites: Mathematics 5, 11; Physics 3, 4.
Spring semester. McGarity.

41. Thermofluid Mechanics.

Introduction to macroscopic thermodynamics; first and second laws, properties of pure substances, thermodynamics of an ideal gas, applications using system and control volume formulation. Introduction to fluid mechanics; development of conservation theorems, hydrostatics, dynamics of one-dimensional fluid motion. Includes laboratory.
Prerequisites: E12 and E14 (or equivalent background).
Fall semester. Macken, Orthlieb.

55. Systems Theory.

Mathematical analysis of an assemblage of interacting elements composing a generalized system. Fourier methods and the Laplace

transform. State variables, the system state transition matrix and canonical forms. Probabilistic systems analysis and decision theory. Response to random inputs. Correlation functions and spectral distribution. Some applications in the socio-economic and urban system domain.
Prequisite: E12 or equivalent.
Fall semester. Dunn, Kresch.

57. Operations Research.

(Also listed as Economics 54). The principal mathematical tools for optimal decision making are presented and applied through case studies from the private and public sectors. Topics include assignment and transportation problems, linear and dynamic programming, decision making under uncertainty, game theory, stochastic processes, and queuing theory. Also, the working principles of engineering economy are introduced and combined with operations research topics. This course may precede or follow Mathematics 28 (Mathematical Programming) for a strong introduction to the theory and practice of optimization. Normally for sophomore and junior students.
Fall semester. McGarity.

58. Control Theory and Design.

An introduction to the control of engineering systems. Analysis and design of linear control systems using root locus and frequency response techniques. Over-driven operation of first- and second-order controlled systems. Digital control techniques, including analysis of A/D and D/A converters, digital filters, and numerical control algorithms. Laboratory includes design of both analog and digital controllers.
Prerequisite: E12 or equivalent.
Spring semester. Dunn.

59. Mechanics of Solids.

This course deals with the internal stresses and changes of form when forces act on solid bodies. State of stress and strain, strength theories, stability, deflections, and photoelasticity. Elastic and Plastic theories. Includes laboratory.
Prerequisite: E6 or equivalent.
Fall semester. Willis.

60. Structural Theory and Design.

Principles of structural systems and mechanics of deformable bodies pertaining to deflection and stability. Structural mechanics of space and plane framed structures including stress analysis, and deflections of determinate and indeterminate structures. Includes elements of design of determinate structures. Includes laboratory.
Prerequisite: E59.
Spring semester. Willis.

62. Soil Mechanics Theory and Design.

Using the basic concepts of physical geology as a unifying framework, the principles of soil mechanics are studied. Subjects introduced include formation of soils, clay mineralogy, transport and deposition of soils, soil type identification, consolidation theory, flow through porous media, stresses in earth masses, and slope stability. These topics are applied to engineering design problems. Includes laboratory.
Prerequisite: E59.
Spring semester. Willis

64. Environmental Engineering.

An introduction to the fundamentals of applied ecology in water resources engineering, with emphasis on pertinent areas of hydrolgy, hydraulics, water quality, and energy considerations. Fundamentals are related to stream quality management and planning for water resources and land use projects by means of student design projects, including field studies, on a local drainage basin. Includes laboratory.
Prerequisite: Two semesters of science or engineering.
Spring semester. Willis.

66. Energy Policy.

(Also listed as Political Science 66). Presentation and exploration, in seminar format, of political, economic and technological issues affecting development of energy policy, and investigation of the influence of energy policy on policymaking in other areas. Possible topics include: development of the U.S. energy bureaucracy, international political/economic decision-making and OPEC, development and impact of energy price decontrol,

economic and political aspects of U.S. energy technology exports, economic and environmental perspectives of energy resource development (renewable and otherwise). Enrollment by permission of instructors. Suggested preparation includes Economics 1-2 and Political Science 2 or 51.
Fall semester. (Does not satisfy distribution requirement.)

68. Environmental Policy.

(Also listed as Political Science 68.) A seminar exploring public policy issues related to the protection of the natural environment. Interactions among governmental agencies, private industries, and public interest groups are explored and related to the physical processes that are affected and the pollution control technologies that are available. Enrollment by permission of the instructors; suggested preparation includes Economics 1 and 2, Political Science 2, a science course, and recent exposure to basic mathematics or statistics.
Fall semester. Not offered 1980-81.

71. Circuits and Systems.

Analysis and synthesis of electric circuits and other dynamic systems. Properties of linear system functions and their application to system design, active systems and stability, response to random signals, energy functions and theorems, digital filters, state variable analysis of linear and non-linear systems, optimization. Application of theory to engineering design. Includes laboratory.
Prerequisite: E12 or equivalent.
Fall semester. Offered when demand and staffing permit. Barus.

73, 74. Electronic Circuit Analysis and Design I and II.

This course begins with an introduction to the physics of semiconductor devices and modern device technology. The remainder of the year is devoted to the study of digital and analog circuits using both bipolar and field effect devices. The material is covered in such a way that E73 alone provides a working knowledge of digital logic and operational amplifiers. Use of a linear circuit analysis program for circuit simulation is encouraged. Laboratory work is oriented toward circuit design.
Prerequisite: E12 or equivalent. E73 is a prerequisite for E74. Bowler.

75. Electromagnetic Theory.

Engineering applications of Maxwell's equations. Macroscopic field treatment of magnetic, dielectric and conducting materials. Forces, motion and energy storage. Field basis of circuit theory. Electromagnetic waves; waveguides, transmission lines, and antennas. Includes laboratory.
Prerequisite: E12 or equivalent; Mathematics 22.
Fall semester. Not offered 1980-81. Barus.

77. Communication Systems.

Theory and design principles of analog and digital electronic communications. Such topics as information theory, coding, analog and digital modulation, multiplexing, noise, filtering, and data transmission will be treated. Emphasis will be placed on theoretical and practical limitations and functional design. Application will be made to a variety of practical systems such as television relay, facsimile, telemetry, broadcasting, and data communications. Includes laboratory.
Prerequisite: E12 or equivalent.
Fall semester. Barus.

81. Thermodynamics.

Review of first and second laws of thermodynamics. Irreversibility, availability, real gases and mixtures. Chemical and nuclear reactions. Application to power and refrigeration cycles. Includes laboratory.
Prerequisite: E41.
Fall semester. Macken, Dunn.

82. Engineering Materials.

The integration of the selection of engineering materials into overall design is emphasized. Such a process blends a basic understanding of material behavior, a knowledge of the manner in which properties may be altered, and familiarity of compatible manufacturing processes, together with mechanical and thermal design to produce a successful functional product. In this course, the basic laws and concepts relating the structure of solids to their physical and mechanical properties are emphasized. Both metals and non-metals including wood, concrete, plastic and composite materials, are included. Various means of altering properties such as heat treatment and cold working are then discussed. Manufactur-

ing processes are studied in detail. Includes laboratory.
Prerequisite: E59 or permission of instructor.
Spring semester. Orthlieb.

83. Fluid Mechanics.

Fluid mechanics is treated as a special case of continuum mechanics in the analysis of fluid flow systems. Relevant equations for the conservation of mass, momentum, and energy are derived. These are then applied to the study of flows of inviscid and viscous, incompressible and compressible fluids. Includes laboratory.
Prerequisites: E41 or equivalent.
Fall semester. Macken, Dunn.

84. Heat Transfer.

A basic introduction to the physical phenomena involved in heat transfer. Analytical techniques are presented together with empirical results to develop tools for solving problems in heat transfer by conduction, forced and free convection, boiling, condensation, and radiation. Numerical techniques are discussed for the solution of conduction problems. Includes laboratory.
Prerequisites: E41 or equivalent.
Spring semester. Macken.

90. Engineering Design.

This project-oriented course serves as a final exercise for all engineering majors. Three concurrent sections, each comprised of students sharing a common disiplinary interest, meet separately to examine and synthesize a solution to a preselected design problem. The three sections also meet jointly to study general design methodology and to discuss the economic, social, and environmental aspects of the overall design. Individual student contributions to the design project will be evaluated by both a written report and an oral presentation.
Spring semester. Staff.

91. Special Topics.

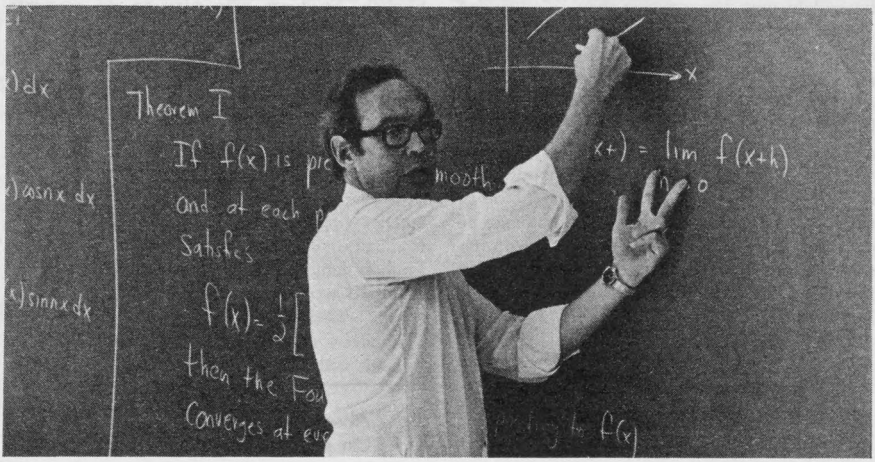
Subject matter dependent on a group need or individual interest. Normally restricted to senior students and offered only when staff interests and availability make it practicable to do so.

93. Directed Reading.

With the permission of a staff member who is willing to supervise it, a qualified student may undertake a program of directed reading in an area of engineering as an extension of one of his or her courses.

96. Thesis.

With approval, a student may undertake a thesis project as a part of his or her program in the senior year. The student is expected to submit a prospectus of the thesis problem before the start of the semester in which the thesis project is carried out.



English Literature

THOMAS H. BLACKBURN, Professor and Dean§§
DAVID COWDEN, Professor
LEE DEVIN, Professor and Director of The Theatre
HAROLD E. PAGLIARO, Professor
SUSAN SNYDER, Professor‡
CHARLES JAMES, Associate Professor†
LUCY McDIARMID, Associate Professor
PHILIP M. WEINSTEIN, Associate Professor and Chairman
CRAIG WILLIAMSON, Associate Professor
CHARLES A. BALESTRI, Assistant Professor
ERIC A.G. BINNIE, Assistant Professor and Technical Director of The Theatre
MARY L. POOVEY, Assistant Professor
PETER J. SCHMIDT, Assistant Professor

This Department offers courses in English literature, American literature, theatre, and some foreign literatures in translation. The departmental curriculum is planned to provide experience in several critical approaches to literature and play production, in the intensive study of works of major writers, the study of literature of limited periods, and the study of the development of literary types. The Department also provides instruction in the techniques of writing, acting, and design for the theatre.

REQUIREMENTS AND RECOMMENDATIONS

Any introductory course — English 2 through 10 — or its equivalent by departmental examination, is the prerequisite for all other courses in literature and theatre. (This prerequisite does not apply to seniors, nor is it required of those who wish only to take studio courses.) Introductory courses are characterized by syllabi with less reading than in advanced courses, by frequent short papers, and by considerable attention to class discussion; they are viewed by the Department as particularly appropriate for freshmen. Enrollment will be limited to 25 students per course; priority is given to freshmen and sophomores. Students will not normally take a second introductory course unless approved by the instructor of the first course. Only one such course may be counted towards the major. The minimum requirement for admission as a major or as a minor in English is two semester-courses in the Department.

Students considering a major in English are strongly urged to take one or two additional courses during the sophomore year. Majors and prospective majors should consult a member of the English Department for information about courses in other departments complementary to their work in English. Students who plan to do graduate work, to follow a course of professional training, or to seek teacher certification in English, should see a member of the Department for early help in planning their programs, as should students who plan to include work in English literature in a program with a major in Literature or Medieval Studies. Students planning to qualify for teacher certification in English are reminded that a course in linguistics or the history of the English language is required in addition to specified work in literature.

† Absent on leave, Spring semester, 1980-81.

‡ Absent on leave, 1980-81.

§§ On administrative leave, 1980-81.

Major in the Course Program: The work of a major in Course consists of a minimum of eight semester courses in the Department, including Shakespeare (English 97), Senior Essay (English 98), and at least two other courses in literature written before 1800; such courses are marked with an asterisk (*).

Major in the External Examination (Honors) Program: Majors in the Honors Program must prepare three or four papers in the Department, two of which must be on subjects covered in seminars in Group 1 or on other early material decided upon after consultation with the Department.

Minor in the Honors Program: Minors are ordinarily required to prepare two papers in the Department.

Theatre Concentration: The work of a major in Course with a concentration in Theatre consists of a minimum of eight semester courses in the Department, including Shakespeare (English 97), Senior Essay (English 98), Play Directing (English 78), Introduction to Design (English 76), and one other course in dramatic literature written before the modern period. The remaining work in Theatre may include studio courses to a maximum of two credits.

Students are urged to consult the announcements of other departments which offer courses appropriate to the concentration. It is useful for those anticipating a theatre concentration to plan their programs early to avoid possible conflict with the twenty-course rule.

1A. Analytic Reading and Composition.

Individual and group work as intensive preparation for further work and with applications to a variety of fields. For students to whom the course is recommended. Does not meet the distribution requirements. May be taken in more than one semester, but for a maximum of one and one half credits.
Each semester.

1B. English for Foreign Students.

Individual and group work on an advanced level for students with non-English backgrounds.
Each semester.

2. The Tragic Vision.

An exploration of traditional and modern conceptions of the tragic experience, based on a close study of narrative, dramatic, and lyric forms of tragedy. The authors read will be Sophocles, Shakespeare, Flaubert, Faulkner, and Yeats.
Each semester. Balestri.

3. The Divided Self.

A study of internal conflict in works by Conrad, Hardy, Faulkner, Penn Warren, Updike, and selected poets.
Each semester. Cowden.

4. Writers and Their Art.

A study of literary works with comic structures, including novels by Austen and Woolf, plays by Shakespeare, and poetry by Pope and Auden. The course will explore the ways in which private imagination is first indulged and then adjusted to the demands of social reality; and the more tentative and ironic nature of that adjustment in twentieth-century writers.
Each semester. McDiarmid.

5. Coming of Age.

This course will deal with various treatments of growing up in plays, lyrics, and novels from ancient Greece to contemporary America. Writers to be studied include Sophocles, Shakespeare, Wordsworth, Blake, Austen, Dickens, James, Joyce, and Toni Morrison.
Each semester. Poovey.

6. Rites of Passage.

The course will focus on various rites of passage, symbolic actions which chart crucial changes in the human psyche, as they are consciously depicted or unconsciously reflected in different literary modes, and will examine the shared literary experience itself as ritual process. Topics will include innocence and experience, transition and stasis, community and liminality, and the mediation of the sacred and the profane. Major authors will include the *Beowulf* poet, Blake, Shakespeare, Conrad and Lawrence.
Fall semester. Williamson.

7. Quest Romances in American Literature.

The romance has always been a favorite form for American writers. This year we will use

two novels by Cooper and Hawthorne to define the form, then will trace its evolution in works by James, Fitzgerald, and Hurston. These patterns may also be found in poetry of Whitman, Dickinson, and Stevens, but with differences which will allow us to examine the distinct conceptions of time and selfhood that lyrics and narratives have.
Each semester. Schmidt.

8. The Ironic Spirit.
A critical approach to reading prose, verse, and drama focussing on the effectiveness of the ironic spirit as a literary device. Selections will be drawn from English and American authors.
Fall semester. James.

9. Four Secular Men of the Spirit.
A study of iconoclastic authors — Blake, Shaw, Lawrence, and Heller — whose works attack orthodox ways and offer moral alternatives as necessary to human well-being.
Spring semester. Pagliaro.

16. Survey of English Literature, I.
An historical and critical survey of poetry, prose, and drama from *Beowulf* to Milton.
Fall semester. Pagliaro.

17. Survey of English Literature, II.
An historical and critical survey of poetry, prose, and drama from Dryden to Lawrence.
Spring semester. Pagliaro.

19. Introduction to Old English: Language, Literature, and Culture.*
The course will be an introduction to Old English language, literature, and culture with an emphasis upon elegiac and heroic poetry. Initially, two days a week will be devoted to learning the language and to reading selected prose passages. One day a week will be spent on a cultural topic such as history, art, architecture, religion, or Germanic traditions. The latter part of the course will be devoted entirely to the study of Old English poetry. With the permission of the instructor this course may be taken without the usual prerequisite course; however, it may not serve in the place of a prerequisite for other advanced courses.
Fall semester. Williamson.

20. Medieval English Literature.*
The course is a survey of English literature, primarily poetry, from the 8th through the 15th century. Readings will include: Old English riddles, elegies, and charms, *Beowulf*, several of Chaucer's *Canterbury Tales* and *Troilus and Criseyde*, selected mystery plays, *Everyman*, *Sir Gawain and the Green Knight*, *Pearl*, portions of *Piers Plowman*, and Malory's *LeMorte Darthur*. Selected lyrics and *Canterbury Tales* will be read in Middle English; other works in translation or modernized forms. No previous knowledge of Middle English is required.
Spring semester. Williamson.

22. Satire.
Examination of satire as a literary genre.
Not offered 1980-81. James.

23. Studies in English Fiction.
This course will study developments in fiction (mainly English) from Dickens, George Eliot, and Flaubert to Lawrence and Joyce.
Not offered 1980-81. Weinstein.

25a, 25b. Shakespeare.
(for non-majors). Each course will be complete in itself, will aim at covering a wide range of Shakespeare's career, and will avoid duplicating material used in the other course. (Students may take both 25a and 25b.)

Fall semester, 25a — *Henry IV Parts 1 and 2*, *Henry V*, *Midsummer Night's Dream*, *Merchant of Venice*, *As You Like It*, *Measure for Measure*, *Othello*, *King Lear*, *Coriolanus*, *The Tempest*. Balestri.

Spring semester, 25b — *Richard III*, *Richard II*, *Much Ado about Nothing*, *Romeo and Juliet*, *Twelfth Night*, *Troilus and Cressida*, *Hamlet*, *Macbeth*, *Antony and Cleopatra*, *Julius Caesar*, *The Winter's Tale*. Devin and Weinstein.

27. Theory of the Novel.
A study of both the history of the novel and prominent twentieth-century theories of prose narrative. Critical approaches to be studied include Marxist, Freudian, and structuralist criticism. Novelists to be studied include Defoe, Sterne, Shelley, Dickens, Eliot, Conrad, and Woolf.
Fall semester. Poovey.

29. The Black American Writer.
A survey of prose fiction and poetry written by black Americans during the 19th and 20th centuries: a literature by artists conscious of their marginal place in a dynamic society

attempting to square their subjective visions with their art. Emphasis may shift from time to time, but authors include Martin Delaney, Charles Chesnutt, Jean Toomer, Langston Hughes, Richard Wright, Ralph Ellison, Gwendolyn Brooks, and James Baldwin.
Not offered 1980-81. James.

31. Chaucer.*

Reading in Middle English of most of Chaucer's major poetry with emphasis on *The Canterbury Tales* and *Troilus and Criseyde*. The course attempts to place the poetry in a variety of critical and cultural contexts — both medieval and modern — which help to illuminate Chaucer's art.
Spring semester. Williamson.

33. Renaissance Poetry.*

Modes of the lyric: the lyric speaker as lover, sinner, shepherd, reflective moralist, and self-conscious artist. Works by Shakespeare, Donne, Milton, Marvell, Herbert, Spenser, and Jonson.
Not offered 1980-81. Snyder.

34. Renaissance Comparative Literature.*

See CEL 34. Selected major writers of the Continental Renaissance studied in translation.
Not offered 1980-81. Snyder.

35. Tudor-Stuart Drama.*

Development of the English drama in the 16th and 17th centuries. The course focuses on the literary and theatrical values of the drama of Marlowe, Jonson, and Webster.
Not offered 1980-81. Balestri.

36. Milton.*

Study of Milton's poetry with particular emphasis on *Paradise Lost*.
Spring semester. Balestri.

37. Eighteenth-Century Literature.

A study of English prose and poetry from 1660-1800, with attention given to the cultural and intellectual setting.
Spring semester. Pagliaro.

38. Romantic Poetry.

A study of the poetry of Blake, Wordsworth, Coleridge, Byron, Shelley, and Keats, with attention given to the ideas as well as to the form and structure of their works.
Fall semester. Pagliaro.

39. Images of Women in the Eighteenth-Century Novel.

An examination of selected eighteenth-century novels which focus on the maturation of a young woman. We will read novels by both men and women in an attempt to discover major cultural stereotypes and the extent to which these stereotypes were internalized or resisted. Writers to be studied include Defoe, Richardson, Rousseau, Burney, Wollstonecraft, and Austen.
Fall semester. Poovey.

40. Topics in American Literature.

A survey of several enduring issues in American literature, among them the myth of the self-made man or woman, the "plain style" in prose and poetry, and the concept of manifest destiny in Puritan, Deist, and Romantic historiography. The reading will include a variety of texts, from autobiographies, histories, essays, diaries, and political tracts, to poems and fiction. Among the authors we will study this year are the Puritans Bradstreet, Winthrop, Taylor, and Edwards; the Deists Franklin, Jefferson, and Paine; and Douglass, Hawthorne, Emerson, Thoreau, Whitman, Dickinson, Twain, Chopin, and Fitzgerald.
Spring semester. Schmidt.

44b. Twain, Faulkner, and Flannery O'Connor.

Selected works. Topics will include the "confidence game," relations between blacks and whites, and the ways in which the writer's imagination confronts some of the ideals and contradictions of American life.
Fall semester. Weinstein.

45a. Modern Poetry (American).

Selected poems and prose by Williams, Pound, Stevens, and Moore, with special attention given to how each poet invents early, middle, and late styles.
Spring semester. Schmidt.

45b. Modern Poetry (British).

Major British poets of the last hundred years.
Fall semester. McDiarmid.

47. The Contemporary Black Writer of the United States.

An examination of the ideology and the artistic sensibilities of the contemporary black

writer as reflected in his prose and verse. Selections will be made from works written since the mid-fifties, including (but not limited to) Baraka (Jones), Baldwin, Brooks, Bullins, Demby, Morrison, Reed, and Williams.
Not offered 1980-81. James.

48. Modern Drama.

See CEL 48. An examination of the range of dramatic literature, theatre aesthetics, critical theories and production styles since Ibsen.
Not offered 1980-81. Binnie.

49. The American Autobiography.

An examination of the creative impulse to order that is the key to the nature and form of the American autobiography. The course will set up pairings of black and white autobiographies that interrelate and interanimate each other. Writers include Benjamin Franklin, W.E.B. DuBois, Gertrude Stein, Mark Twain, Langston Hughes, and Richard Wright.
Not offered 1980-81. James.

50. The Modern English Novel.

Study of the development of the modern novel beginning with James and continuing to the present.
Spring semester. Cowden.

54. Proust, Joyce and Faulkner.

Selections from Proust's *Remembrance of Things Past*, Joyce's *Portrait of the Artist* and *Ulysses* entire, and selected Faulkner novels. Emphasis on fictional autobiography, the writers' preoccupation with time and the past, and the ideological and formal tenets of modernism.
Not offered 1980-81. Weinstein.

55. The Black African Writer.

An examination of literary themes and modes employed by the black African to express his own life and culture and to objectivize his peculiar relation to European colonialism. Readings will be chosen from works written in English and in translation including (but not limited to) those of Achebe, Armah, Clark, Mphahlele, Senghor, Ngugi, and Soyinka.
Not offered 1980-81. James.

56. Fictions of American Naturalism.

A study of the way scientific method, deistic faith, and biological discoveries converged in the imagination of the American writer of fiction and led to tensions between hope and despair, rebellion and apathy, defying and submitting to nature, and celebrating man's impulses and trying to educate them. Writers will include Stephen Crane, Theodore Dreiser, Frank Norris, Sherwood Anderson, and Richard Wright.
Not offered 1980-81. James.

57. The Nineteenth-Century English Novel.

A study of the development of the novel during the Romantic and Victorian periods. The novelists discussed will include Austen, the Brontës, Dickens, Thackeray, Eliot, Trollope, Meredith, and Hardy.
Fall semester. Cowden.

60. Fiction Writers' Workshop.

The course is devoted to the analysis of stories submitted by students. It meets once a week for three hours. In addition to receiving practical help from fellow writers, students have an opportunity to articulate and explore theoretical aspects of fiction writing. Students should submit one story for admission, at a time announced during the fall semester. Admission and credit are granted at the discretion of the instructor.
Not offered 1980-81.

61. Poetry Workshop.

A class, limited to twelve, in which students write, read, and talk about poetry. During the first half of the term students pursue formal exercises such as a riddle poem, a dramatic monologue, and a meditation poem; during the last half, their own individual projects. The workshop ends with the writing of a villanelle or sonnet. Students should submit 3-5 pages of poetry for admission to the workshop. Admission and credit are granted at the discretion of the instructor.
Spring semester. Williamson.

62. Theatre: Playwriting Workshop.

Projects in playwriting. Discussion of playscripts supported by some reading and analysis of appropriate models. Students should submit a completed one-act play in the fall preceding the semester they wish to take the course. Admission and credit are granted at the discretion of the instructor.
Spring semester. Devin.

71. Theatre: Techniques of Acting.
Play and scene analysis for actors; rehearsal practices; exercises and warm-up. One-half semester course credit. (Studio course)
Fall semester. Devin.

72. Theatre: Scene Study.
A studio for intermediate and advanced actors. Students use scripted material as the occasion for work on specific acting problems. Prerequisite: English 71 or the instructor's permission. This course may be repeated for credit, with the instructor's permission. One-half semester course credit. Credit/No Credit grading. (Studio course)
Each semester. Devin.

73. Theatre: Production Workshop.
Introduction to theatre technology: problems in lighting, costume, sound, and scene design. One-half semester course credit. This workshop may be repeated for credit with the instructor's permission. NOTE: Two sections of this course are offered each semester. Each section will be devoted to different aspects of technology selected from those mentioned above. Interested students should consult with the instructor in choosing the section appropriate to their interests. (Studio course)
Each semester. Binnie.

74. Theatre: Play Analysis.
Examination of playwriting strategies and the solution of problems in dramaturgy. Emphasis on Aristotle's *Poetics* and other "architectural" criticism. Application of critical principles to selected plays.
Not offered 1980-81. Devin.

75a. Theatre: Ensemble I.
An intensive course in theatre technique consisting of a rehearsal period of five weeks, five nights a week, 8:00-11:00 p.m. A company of 14 actors is selected at the beginning of each semester through tryouts and interviews. One-half semester course credit. This course may be repeated for credit with the instructor's permission. (Studio course)
Fall semester. Devin.

75b. Theatre: Ensemble II.
Study and rehearsal of a full-length play. Tryouts as announced. One-half semester course credit. This course may be repeated with the instructor's permission. (Studio course)
Spring semester. Devin.

76. Theatre: Introduction to Design.
The theoretical and historical foundations of contemporary theatrical design. Lab work investigates theory through the practical application of basic techniques.
Fall semester. Binnie.

77. Theatre: Design (Scenic).
An intensive study of theatre/environment design with emphasis on design responses to dramatic literature. Development of design presentation techniques through lab work. Prerequisite: English 76, or the instructor's permission.
Spring semester. Binnie.

78. Theatre: Play Directing.
Analysis of dramatic literature for production. Exploration of performance and production possibilities. Lab sessions held jointly with Theatre: Design. Prerequisite: one credit of studio course work in theatre, or the instructor's permission.
Spring semester. Devin.

81. Colloquium: Beowulf.*
A close reading of the oldest Englisc epic in the original *Englisc.* The course will combine the techniques of close reading with a discussion of the larger literary and cultural themes. Critical readings will range from Tolkien to Sutton Hoo. Modern literary responses to the poem such as Gardner's *Grendel* may also be included.
Not offered 1980-81. Williamson.

82. Colloquium: Wright, Ellison, Baldwin.
Although the novels written by these Afro-American writers will be the central focus of study, this course will also examine selections from the short stories, the essays, and the Baldwin plays. Single credit.
Fall semester. James.

83. Restoration and Eighteenth-Century Drama.
An examination of the English theatre in search of a new identity of purpose, genre and style, following eighteen years of Puritan suppression, focusing on plays by Dryden,

Wycherley, Congreve, Gay, Goldsmith and Sheridan, with appropriate attention to related developments in English opera and visual arts. *Fall semester.* Binnie.

86. Folklore and Folklife Studies.
An introduction to the major forms of folklore and selected forms of folklife materials. The course includes the study of myth, legend, folktales, proverbs, jokes, riddles, and other verbal arts including folk music. It explores superstition, witchcraft, magic and popular beliefs; and considers the function of folklore in highly industrialized modern societies as well as in traditional ones. Crosslisted as History 86.
Spring semester. Morgan.

93. Directed Reading.
Students who plan directed reading must consult with the appropriate instructor and submit a prospectus to the Department by way of application for such work before the beginning of the semester during which the study is actually done. Deadlines for the receipt of written applications are April 1 and November 13. Normally limited to juniors and seniors.

97. Shakespeare.
(for Course majors only). Study of the complete works of Shakespeare, tracing the development of his craftsmanship and ideas. Required of Course majors in the Department, who meet weekly in small groups during the first semester of the senior year. Students should read through the plays before beginning the course. Two credits.
Fall semester. Staff.

98, 99. Senior Essay, Senior Thesis.
In the fall semester of the senior year, Course majors in the Department pursue a literary project (English 98) of their own choosing. The major part of the semester is devoted to preparing an essay (or essays) under the supervision of a member of the Department. A brief prospectus for the project must be submitted for approval by the Department in April of the junior year. Before submitting this prospectus, Course majors should consult with the Department Chairman and with the Department member who might supervise the project.

The project, culminating in an essay (or essays) of 20-25 pages, will be completed in December of the senior year. Students who do well on this project and wish to develop it into a comprehensive thesis will take English 99 in the spring semester. The work on the thesis will normally deepen or expand work completed during the fall; the relation of the thesis to the fall essay (essays) will of course vary according to the nature of the student's project.

English 98 is required of all Course majors. English 99 is optional, depending upon the student's performance in 98 and interest in pursuing the project, and the Department's approval.

Courses Projected for Subsequent Years:

42. Victorian Literature.

53. Proust and Joyce.

59. Religion and Literature.

SEMINARS

Group I

101. Shakespeare.
Study of Shakespeare as dramatist and poet. The emphasis is on the major plays, with a more rapid reading of the remainder of the canon. Students are advised to read through all the plays before entering the seminar.
Each semester. Staff.

102. Chaucer and Medieval Literature.
A survey of English literature, primarily poetry, from the 8th through the 15th century with an emphasis upon Chaucer. Texts will include *Beowulf* and other selected Old English

poems, *Sir Gawain and the Green Knight*, Chaucer's *Troilus and Criseyde* and a major portion of *The Canterbury Tales*, *Piers Plouman*, *Pearl*, *Everyman*, selected mystery plays, and portions of Malory's *LeMorte Darthur*. Background readings will include selections from Andreas Capellanus, Augustine, and Boethius. Works in Chaucerian dialect will be read in Middle English; other works will be read in translation or in modernized versions.
Fall semester. Williamson.

104. Milton.
Study of Milton's works with special emphasis on *Paradise Lost*.
Spring semester. Balestri.

105. Tudor-Stuart Drama.
The development of English drama from medieval morality plays to Jacobean tragedy and comedy.
Not offered 1980-81. Balestri.

106. Renaissance Epic.
The two major English epics of the period, Spenser's *Faerie Queene* and Milton's *Paradise Lost*, considered in the context of the work of each poet and in relation to two antecedents, Virgil's *Aeneid* and Tasso's *Jerusalem Delivered*.
Not offered 1980-81. Snyder.

108. Renaissance Poetry.
Poetic modes and preoccupations of the English Renaissance, with emphasis on Sidney, Shakespeare, Spenser, Donne, Herbert, and Marvell.
Not offered 1980-81. Snyder.

109. Eighteenth-Century Literature.
Examination of the literary forms and critical values of the age, with special attention given to the works of Dryden, Swift, Pope, and Johnson.
Not offered 1980-81. Pagliaro.

Group II

110. The Romantic Poets.
Examination of the poetry of Blake, Wordsworth, Coleridge, Byron, Shelley, and Keats.
Fall semester. Pagliaro

112. The Nineteenth-Century English Novel.
Studies in four novelists: Austen, Dickens, Eliot, and Hardy.
Spring semester. Cowden.

113. The Modern Novel.
Studies in four novelists: James, Conrad, Joyce, and Woolf.
Not offered 1980-81. Cowden.

115. Modern Comparative Literature.
Studies in fiction from Flaubert and Melville to the present. Students are advised to read *Ulysses* before taking the seminar.
Each semester. Weinstein.

116. American Literature.
A close look at major works by Whitman, Melville, Williams, and Faulkner. With Melville and Faulkner, discussion topics will include their use of epic heroism, Biblical typology, manners, and mixed "high" and "low" diction. With the poets, we will define how American Romanticism revises traditional poetic forms (including the eclogue, ode, elegy, and epic) and then makes distinctive claims about the relation between the American poet and his or her audience.
Fall semester. Schmidt.

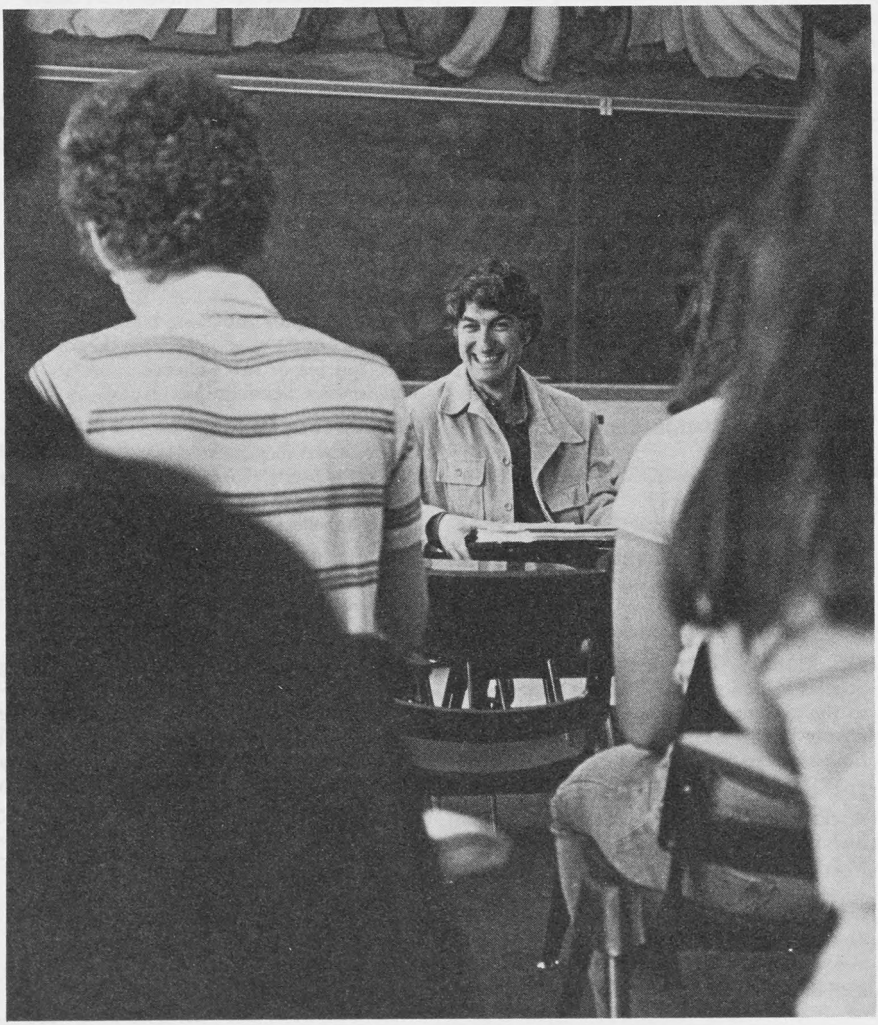
118. Modern Poetry.
Study of the modern tradition in English and American poetry. The seminar will concentrate on the work of Yeats, Eliot and Auden.
Spring semester. McDiarmid.

119. Modern Drama.
The range of dramatic literature since Ibsen.
Fall semester. Devin.

120. Theory of Criticism.
A course designed to provide a working knowledge of the major schools of contemporary criticism. In addition to examining the basic assumptions of these schools, we will also survey their relationship to literary modernism and post-modernism. Theories to be studied include New Criticism, Structuralism, Post-Structuralism, Sociological Criticism, Marxism, Post-Marxism, and Freudian Criticism.
Spring semester. Poovey.

180. Thesis.
A major in the Honors Program may elect to write a thesis as a substitute for one seminar. The student must select a topic and submit a plan for Department approval no later than the end of the junior year. Normally, the student writes the thesis, under the direction of a member of the Department, during the fall of the senior year.

183. Independent Study.
Students may prepare for an Honors Examination in a field or major figure comparable in literary significance to those offered in the regular seminars. Independent study projects must be approved by the Department and supervised by a Department member. Deadlines for the receipt of written applications are April 2 and November 13.



History

ROBERT C. BANNISTER, Professor and Chairman
JAMES A. FIELD, JR., Professor*
ANNE DZAMBA SESSA, Visiting Professor (part-time)**
BERNARD S. SMITH, Professor
HARRISON M. WRIGHT, Professor and Provost§§
MARGARET ANDERSON, Associate Professor
RICHARD R. BEEMAN, Visiting Associate Professor (part-time)**
ROBERT S. DUPLESSIS, Associate Professor†
LILLIAN M. LI, Associate Professor†
KATHRYN L. MORGAN, Associate Professor
JEROME H. WOOD, JR., Associate Professor*
EDWIN B. BONNER, Visiting Lecturer§***
PETER P. GARRETSON, Lecturer

The Department of History attempts to give students a sense of the past, an acquaintance with the cultural and institutional developments which have produced the world of today, and an understanding of the nature of history as a discipline. The courses of the Department emphasize less the accumulation of data than the investigation, from various points of view, of those ideas and institutions — political, religious, social, economic — by which people have endeavored to order their world.

REQUIREMENTS AND RECOMMENDATIONS

Prerequisites: Any one of the introductory history courses (those numbered 1 through 9), or its equivalent by Advanced Placement, is the prerequisite for advanced history courses open to students of all classes (those numbered 11 through 89). In the sophomore and junior years, with the consent of the instructor and of the department chairman, an advanced course may be taken concurrently with an introductory course. In the senior year advanced courses may, with the consent of the instructor, be taken without prerequisite. The prerequisite for admission to the Department as a major in the Course or External Examination (Honors) Program or as a minor in the Honors Program is at least two history courses taken at Swarthmore and a satisfactory standard of work in all courses.

Advanced Placement: The Department will grant one semester's credit for incoming students who have achieved a score of 3, 4, or 5 in Advanced Placement history tests. This credit may be counted toward the number of courses required for graduation. It may be used in partial fulfillment of the college distribution requirements. It may serve as the prerequisite for advanced courses in history and as partial fulfillment of the departmental distribution requirements listed below.

Major in the Course Program: The work of the major in Course consists of at least eight (and normally no more than twelve) semester courses in the department, chosen so as to fulfill the following requirements:

* Absent on leave, fall semester, 1980.
† Absent on leave, 1980-81.
** Fall semester, 1980.
*** Spring Semester, 1981.
§ Bryn Mawr-Haverford-Swarthmore faculty exchange program.
§§ On administrative leave, 1980-81.

(a) Course majors must fulfill certain departmental distribution requirements. For purposes of distribution the Department has divided its courses into four groups: (1) Ancient, Medieval, and Early Modern Europe; (2) Modern Europe; (3) the United States; and (4) Africa, Asia, and Latin America. Course majors must take at least two courses from any two of these groups and either two courses from a third group or one course each from the third and fourth. Beyond that, majors are encouraged to concentrate informally in topics that are of special interest to them.

(b) By the time of graduation Course majors must have taken one of the following: History 1, 2, or 3.

(c) Course majors must take one of the following options: (i) They may take Special Topics (History 91), which briefly considers the nature and method of historical research and writing, but primarily involves an extended research paper, or thesis. Students who take Special Topics will have a comprehensive examination based on that research paper and on three associated courses. (ii) Or they may take a course in historiography, of limited enrollment, which considers general historiographical problems. Students who take one of these courses will have a written comprehensive examination based on all their history courses. The exact nature and subject matter of the courses in historiography may change from year to year. For 1980-81, the two historiography courses involved are Medieval European Historiography (History 15) and Making the American Past (History 59).

Major and minor in the External Examination (Honors) Program: Candidates for Honors may elect history as a major or a minor in the Division of Humanities, in the Division of the Social Sciences, or in cross-divisional programs. Majors in the Honors Program may take either three or four seminars in the Department. Minors in the Honors Program are ordinarily expected to take at least two seminars.

General: Students seriously considering a major in history should try to take more than two history courses during their freshman and sophomore years. Those who intend to continue their studies after graduation should bear in mind that a reading knowledge of one or two foreign languages (particularly French and German) is now generally assumed for admission to graduate school.

1. Early Europe.
Europe from the rise of Christianity to the end of the Middle Ages. This course will stress the uses of primary sources.
Fall semester. Smith.

2. Early Modern Europe.
A topical survey of Europe from the late Middle Ages to the mid-eighteenth century. Readings in primary sources and secondary works.
Not offered 1980-81. DuPlessis.

3. Modern Europe.
Europe from the Old Regime to the mid-twentieth century.
Spring semester. Anderson or DuPlessis.

4. Latin America.
The development of the Latin American area from preconquest times to the present. Emphasis is on the political, economic, and social development of Brazil, Mexico, and Argentina, and on recent attempts at radical transformation.
Spring semester. Wood.

5. The United States to 1877.
The colonial experience; independence, a new society and a new government; transcontinental expansion and the struggle between North and South.
Fall semester. Beeman.

6. The United States since 1877.
Industrialism and its consequences; the United States as a great power; the problems of a shrinking world.
Spring semester. Bannister or Field.

7. African-American History.
A survey of the African-American experience from its African background to the present. Topics will include politics, economics, education, philosophy, race relations, and selected forms of expressive culture.
Fall semester. Morgan.

8. Africa.
A survey of African history, with an emphasis on tropical Africa in modern times.
Fall semester. Garretson.

9. Chinese Civilization.
An historical introduction to various aspects of traditional Chinese civilization and culture — language, literature, philosophy, art, imperial and bureaucratic institutions. The impact of Chinese civilization on other parts of Asia will be examined briefly.
Not offered 1980-81. Li.

10. Islam.
A survey of the Islamic World from the rise of the Prophet Mohammed to the present.
Fall semester. Garretson.

Classics 31. History of Greece.
(See listing under Department of Classics.)

Classics 32. The Roman Republic.
(See listing under Department of Classics.)

Classics 42. Greece in the Fifth Century B.C.
(See listing under Department of Classics.)

Classics 44. The Roman Empire.
(See listing under Department of Classics.)

11. Early Medieval Europe.
The history of western Europe from the accession of Diocletian to the last Carolingians.
Fall semester. Smith.

12. Later Medieval Europe.
The history of western Europe from the tenth to the fifteenth century, with emphasis on the role of the Papacy.
Not offered 1980-81. Smith.

13. England to 1509.
The political, cultural, and religious history of England from the Roman occupation to the accession of Henry VIII.
Spring semester. Smith.

14. Medieval European Intellectual History.
The history of ideas in western Europe from the fifth to the fourteenth century, with roughly equal attention being paid to the development of political theory, theology, philosophy, education, and science.
Not offered 1980-81. Smith.

15. Medieval European Historiography.
Writings on history, from Augustine to Froissart, and the Middle Ages, from the fifteenth century to the present, will be studied. The course's purpose is to identify changes in each period's conception of the Middle Ages.
Spring semester. Smith.

16. The Twelfth Century.
A study of the most rapid period of change in the Middle Ages, seen through the careers of six representative figures: Abelard, Bernard, Henry Plantagenet, Barbarossa, Louis VII, and Pope Alexander III.
Not offered 1980-81. Smith.

19. The Renaissance.
The Italian Renaissance from the fourteenth to the early sixteenth centuries; its spread and manifestations throughout Europe.
Not offered 1980-81. DuPlessis.

22. The Rise of Western Europe.
The development of the early modern state, society, and economy during the sixteenth and seventeenth centuries.
Not offered 1980-81. DuPlessis.

23. Tudor and Stuart England.
From the Reformation through the Glorious Revolution.
Not offered 1980-81. DuPlessis.

24. Studies in European Economic and Social History.
Patterns of agrarian transformation, commercial expansion, and industrial development in Europe from the fourteenth to the early nineteenth centuries.
Not offered 1980-81. DuPlessis.

29. Victorian England.
England from the 1830's to the end of the nineteenth century. Topics will include landed and industrial society, the poor, and reform; piety and morality; liberalism and its aesthetic and moral critics; Ireland; Splendid Isolation and Empire; and representative figures of the age.
Fall semester. Anderson.

32. Europe of the Dictators, 1914-1945.

The assault of radical politics, left and right, on the social and political fabric of Europe; the interaction of domestic and international conflict; the crisis of industrial capitalism; nationalism, militarism, racism; the first effective experiments in the use of ideology, technology, and terror as means of social control.
Spring semester. Anderson.

36. Modern Germany.

Germany's development from Bismarck to Schmidt.
Fall semester. Anderson.

37. Modern Russia.

The course begins with the reign of Peter and gives half its time to the twentieth century.
Spring semester.

41. The American Colonies.

The foundations of American civilization, 1607-1763. Topics treated include: the development of representative government; denominationalism and religious toleration; the emergence of a new social structure; racism and ethnic relations; and England's imperial policy.
Not offered 1980-81. Wood.

42. The American Revolution.

The conflict between intensive self-government in the colonies and English ideas and projects for empire; the revolt against colonial status and the elaboration of a "republican" ethos and "republican" institutions, 1763-1789.
Not offered 1980-81. Wood.

43. Jeffersonianism and the American Experience.

An interdisciplinary course which focuses intensively on contrasts between the Jeffersonian view of man and America and other perspectives in American politics, constitutional law, social theory, religion, literature, and architecture. Limited enrollment.
Prerequisite: At least one course in United States history, or the permission of the instructor.
Not offered 1980-81. Wood.

45. American Intellectual History to 1865.

Puritanism, the Protestant Ethic, and national character; Enlightenment, Revolution, and the liberal tradition; revivalism, Romanticism, and reform; Transcendentalism and the New England Renaissance; racism, nationalism, and the Civil War.
Not open to freshman.
Not offered 1980-81. Wood.

46. American Intellectual History since 1865.

Liberalism from the "gospel of wealth" to the new industrial state; the "revolt against formalism" in philosophy, law, and the social sciences; literature and society; DuBois, Garvey, and Black Power; the Old Left and the New; culture and conservatism.
Not open to freshman.
Spring semester. Bannister.

47. America and the World: to 1900.

The American role in world affairs from the Revolution through the War with Spain; independence and westward expansion; ideological and economic interaction with Europe and the outer world; the growth of industrial power and the problem of "imperialism."
Not offered 1980-81. Field.

48. America and the World: since 1900.

New responsibilities in the Caribbean and the Far East; the expansion of American economic and cultural influence; two world wars and the effort to prevent a third; the American "challenge" and the American "empire."
Spring semester. Field.

49. American Economic History.

(Also listed as Economics 49.) Economic development from the colonial period to the New Deal with emphasis on patterns of growth, the quantitative expansion of the economy, changing institutional and social structure, and the culminating economic and social crises of each stage of development.
Fall semester. Weiman (Department of Economics).

51. America in the Progressive Era, 1896-1920.

Public policy, social problems, and the "New Liberalism." Topics include politics and governmental reform; trust busting; labor and

socialism; poverty and "social control"; the urban crisis; women's liberation; war and reform.
Fall semester. Bannister.

52. Education in America.

(Also listed as Education 52.) A history of primary, secondary, and higher education in America from the European and colonial origins to the present. The course will consider both theory and practice within the context of American society and culture, and in relation to other agencies of socialization. Prerequisite: The usual exemption for seniors is extended to juniors in the Program in Education.
Not offered 1980-81. Bannister.

54. Women and the Family in American History.

A consideration of ideas about women, children, education, and the family from the seventeenth to the twentieth century. Topics covered are child-rearing practices, marriage customs, attitudes towards sex, the women's movement and changes in family life brought about by political, economic, and social change.
Not offered 1980-81. Frost (Department of Religion).

55. Traditions in Twentieth-Century Black America.

While the course will consider the traditional element in the overall scheme of black culture throughout the African diaspora, major emphasis will be placed on the role of tradition in Black America since 1900.
Prerequisite: History 6, 7, or 8, or the permission of the instructor.
Spring semester. Morgan.

56. Ex-Slave Narratives.

An exploration of slavery and slave folklife as reflected in ex-slave reminiscences. Emphasis is placed on the relationship of the narratives to the understanding of the black experience in the United States.
Prerequisite: History 6, 7, or 8, or the permission of the instructor.
Spring semester. Morgan.

57. Oral History.

By examining the living past this course seeks to emphasize the relevance of history to modern life with special emphasis on American subject matter. Students will be taught the skills requisite for the completion of an original research project that involves the collection, classification, and analysis of data selected from both written and oral sources. General discussion topics include folk religion, the role of the family, local and personal history, and old ways in the new world. Some work will be done off campus.
Fall semester. Morgan.

58. The World of W.E.B. DuBois.

A study of DuBois' thought on important issues as reflected in a selection of his creative writings, speeches, addresses, and major historical works. Topics include DuBois' views on the economic and political position of blacks in the United States, on Pan Africanism, and on imperialism.
Prerequisite: History 6, 7, or 8, or the permission of the instructor.
Fall semester. Morgan.

59. Making the American Past.

An analysis of the nature of historical enquiry and of selected historians and "schools" of interpretation instrumental in shaping our understanding of the American past. Limited enrollment. Open to majors with some American history and, with the permission of the instructor, to non-majors.
Spring semester. Wood.

Religion 17. History of Religion in America.

(See listing under Department of Religion.)

Religion 18. Quakerism.

(See listing under Department of Religion.)

61. Islam: the Modern World.

Topics in Modern Islamic History. Emphasis will be given to the growth of nationalism and to four Middle Eastern countries, including Egypt and Iran.
Spring semester. Garretson.

63. South Africa.

A survey of South African history with an emphasis on Black-White relations and on the development of contemporary problems.
Not offered 1980-81. Wright.

67. The African in Latin America.

The history of black people in French, Portuguese, and Spanish America: slavery, emancipation, the contemporary scene. Special

attention will be given to the impact of African civilization on Latin countries, as well as to comparative analysis of the experience of blacks in that region and in the United States.
Not offered 1980-81. Wood.

72. Japanese Civilization.
Japan's history from its origins to the early nineteenth century tracing its dominant political, intellectual, religious, and cultural patterns.
Not offered 1980-81. Li.

74. Modern China.
The history of China since the early nineteenth century. Topics include the impact of the west, reform and revolution, nationalism, and the development of the communist movement.
Not offered 1980-81. Li.

75. Modern Japan.
The transformation of Japan into a modern nation-state, from the early nineteenth century until the present.
Not offered 1980-81. Li.

77. China: The Politics of History.
This course will examine, with particular emphasis on political influences, the historiography of China from three perspectives: 1) the relationship of the traditional Chinese view of the past to the Confucian state; 2) major ideological controversies from the late nineteenth century to the present; 3) the changing views of Western observers and historians, both popular and scholarly. Limited enrollment.
Prerequisite: History 9, History 74, or the permission of the instructor.
Not offered 1980-81. Li.

86. Folklore and Folklife Studies.
(Also listed as English 86.) An introduction to the major forms of folklore and selected forms of folklife materials. The course includes the study of myth, legend, folktales, proverbs, jokes, riddles, and other verbal arts including folk music. It explores superstition, witchcraft, magic, and popular beliefs; and considers the function of folklore in highly industrialized modern societies as well as in traditional ones.
Spring semester. Morgan.

87. Problems in Historiography.
Readings and discussion centering on the nature of historical writing, on the relationship of historians to their times, and on historical method and its problems. Limited enrollment. Open to majors and, with the permission of the instructor, to non-majors.
Not offered 1980-81.

91. Special Topics (thesis).
A consideration of the nature and methods of historical research and writing, normally for seniors in the Department who choose the thesis option. Individual and group meetings focus on preparation of an extended research paper. Open to non-majors with the consent of the chairman and instructor.
Spring semester. Members of the Department.

93. Directed Reading.
Individual or group study in fields of special interest to the student not dealt with in the regular course offerings. The consent of the chairman and of the instructor is required. History 93 may be taken for one-half credit as History 93A.
Members of the Department.

SEMINARS

The following seminars are offered by the Department, when possible, to juniors and seniors who are preparing to be examined for a degree with Honors. They may be taken without regard to chronological order. Some preliminary reading or other preparation may be required for seminars on subjects in which no work has previously been done.

111. Medieval Europe.
Western Europe from the Papal-Frankish alliance of the eighth century to about 1300.
Fall semester, 1980; Spring semester, 1982. Smith.

116. The Renaissance.
Major topics in Western European history from the fourteenth to the early sixteenth

century, with concentration on the emergence of early modern society and culture in Italy and their adoption by the rest of Europe.
Not offered 1980-81. DuPlessis.

117. Europe in the 16th and 17th Centuries.

A topical study of Western Europe from the Reformation to the crisis of the seventeenth century.
Not offered 1980-81. DuPlessis.

118. Tudor and Stuart England.

Religious reform, political revolution, and socio-economic transformation during the sixteenth and seventeenth centuries.
Not offered 1980-81. DuPlessis.

122. Europe 1760 to 1870.

The revolutionary transformation of the old regime; the rise of liberalism and its critics.
Fall semester. Sessa.

124. England, 1815-1914.

England in the liberal age. The rise of the first modern industrial state and its social, political, and cultural problems and achievements.
Fall semester. Anderson.

125. Fascist Europe.

Italy, Spain, Hungary, Rumania, and Germany in the early twentieth century.
Spring semester. Anderson.

128. Eastern Europe.

The origins and consequences of the Russian Revolution and the development of the nations of East Central Europe.
Spring semester.

130. Early American History.

Political, economic, social, and cultural aspects of the period from the explorations to the early National era.
Spring semester. Wood.

132. The United States since 1787.

Selected topics in the history of the United States.
Each semester. Bannister, Field, or Wood.

134. American Diplomatic History.

A study of the evolution since 1776 of American relations with the outer world with emphasis on ideological, economic, and strategic developments.
Spring semester. Field.

136. American Intellectual History.

Political, social, and literary culture from the late eighteenth century through World War I.
Spring semester. Bannister.

140. Modern Africa.

Studies in sub-Saharan African history with emphasis on the period since 1800.
Spring semester. Garretson.

141. South Africa.

South Africa from the seventeenth century to the present.
Not offered 1980-81. Wright.

144. Modern East Asia.

Political, social, and intellectual change in China and Japan since the early nineteenth century, comparing the different responses to western imperialism and the different approaches to modernization.
Not offered 1980-81. Li.

148. Latin America.

Selected topics in Latin American history.
Fall semester 1981. Wood.

180. Thesis.

With the permission of the Department, Honors candidates may write a theses for either single or double course credit. Double-credit theses will normally be written in the fall semester of the senior year for submission as papers to the visiting examiners. Honors candidates wishing to write a thesis for single (non-Honors) credit should elect History 91.

International Relations

Students who plan to enter upon a career in the field of international relations should include in their programs, during the first two years, introductory courses in economics, history, and political science and should complete the intermediate course in one or more modern languages.

Advanced courses selected from the groups listed below may be incorporated in the programs of students who do thejr major work in economics, history, political science, or modern language.

These students who wish to concentrate in international relations may take their Senior Comprehensive Examination in this field. Students preparing for this examination should take eight or more courses from among those listed below, including all of those listed in Group I, one or more in Group II, and one or more in Group III. The examination is administered by a committee appointed by the chairmen of the Departments of Economics, History, and Political Science, under the chairmanship of the Department of Political Science.

Group I

Political Science 4.
International Politics
Political Science 14.
American Foreign Policy

Economics 30.
The International Economy

Group II

History 4.
Latin America
History 8.
Africa
History 10.
History of Islam
History 37.
Modern Russia

History 47.
America and the World: to 1900
History 48.
America and the World: since 1900
History 74.
Modern China
History 75.
Modern Japan

Group III

Economics 11.
Economic Development
Economics 31.
Comparative Economic Systems
Political Science 3.
Comparative Politics
Political Science 5.
Politics of the Third World
Political Science 13.
International Organizations in World Politics
Political Science 18.
Political Development
Political Science 19.
Comparative Communist Politics

Political Science 20.
Politics of China
Political Science 21.
Politics of Black Africa
Political Science 22.
Latin American Politics
Political Science 55.
Modern Political Theory
Political Science 63.
Advanced International Politics
Political Science 70.
(also listed as Economics 70) The Political Economy of Communist Systems

Students who plan to enter the External Examination (Honors) Program will find it possible to select a similar combination of courses and seminars in the field of international relations. In planning such programs, they should consult with the chairman of their prospective major department.

Linguistics

ALFRED BLOOM, Associate Professor and Program Director*

Linguistics is the study of language. On the most general level it deals with the internal structure of languages, the history of their development and the role they play in influencing the entire spectrum of human activity. *Descriptive linguistics* involves an attempt to arrive at an adequate description of the phonological, syntactic and semantic components of language, differentiating those elements which are generic to all languages from those which are particular to any given language or family of languages. *Diachronic* or *historical linguistics* looks at the evolution of these components over time. *Sociolinguistics* centers on the link between language and the social context in which it is spoken; *mathematical linguistics* on the formal analysis of linguistic structures; and *psycholinguistics* on the interplay between language and the processes of perception and cognition. Futhermore, linguistic variables influence interaction at the individual and societal levels, play a central role in shaping the form and meaning of literary expression and constitute a significant area of philosophical inquiry. Special majors bridging linguistics and the humanities or the social sciences are encouraged for Course students. All such programs are designed on an individual basis to suit the interests of the student, but it is highly recommended that Linguistics 108 be included at some point in the course sequence.

The Honors Major of Linguistics consists of a minimum of three external examination preparations. Honors candidates in addition are required to include in their programs at least one seminar in theoretical linguistics and to have developed competence in at least one foreign language beyond the intermediate level through an advanced course or an introductory literature course.

1. Language — An Introduction.

An introduction to language and its multifaceted interaction with human thought and behavior. The first part of the course will concentrate on the description of the internal structure of language, providing a grounding in the principles of structural linguistics, transformational grammar and semantic theory. The second part will turn from a description of internal structure to brief explorations into the role played by linguistic variables in psychological processes and development, philosophical inquiry, socio-political interaction and artistic creation.
Spring semester. Bloom.

9. Language, Culture, and Society.

(See Sociology 9).

27. Philosophy of Language.

(See Philosophy 26.)

34. The Psychology of Language.

An exploration into the interplay of language and psychological functioning with special emphasis on the psychological implications of contemporary modes of linguistic description and on the role played by linguistic variables in the development of cognitive processes and in the shaping of world view.
Prerequisite: Linguistics 1, Psychology 3 or permission of the instructor.
Fall semester. Bloom.

52. Diachronic Linguistics.

An introduction to historical linguistics: the reconstruction of prehistoric linguistic stages, the establishment of language families and their interrelationships, and the examination of processes of linguistic change on all levels, phonological, morphological, syntactic and semantic.

56. Cognitive Patterns in Moral, Linguistic and Political Behavior.

(Crosslisted as Psychology 56.) An investigation into the role played by cognitive dimensions in influencing linguistic, moral and political behavior, with emphasis on adolescence and beyond. An attempt will be made to place the investigation within a framework provided by current trends in cognitive psychology, existential philosophy

* Joint appointment with Psychology.

and linguistics and to draw on the implications of these dimensions with respect to the relationship of the individual to the nation-state and the international system.
Spring semester. Bloom.

93. Directed Reading or Research.
Students may conduct a reading or research program in consultation with the instructor (permission of the instructor required).
Either semester. Bloom.

96. Senior Paper.
Either semester. Bloom.

Other courses of particular interest to students of Linguistics:

Chinese 1B-2B. Introduction to Mandarin Chinese.

Russian 16. History of the Russian Language.

French 20. History of the French Language.

Greek 19. Comparative Grammar of Greek and Latin.

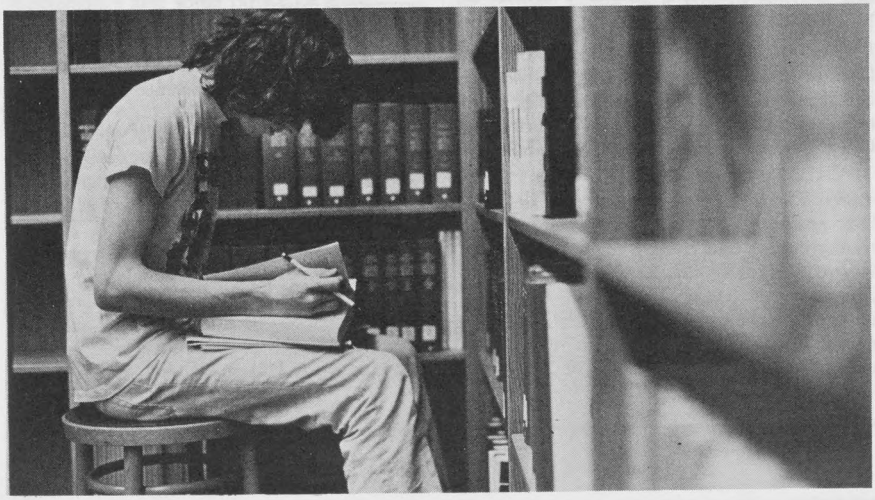
SEMINARS

104. Psychological Anthropology.
(see Sociology 104).

107. Language and Thought.
An intensive investigation of selected linguistic, psychological and philosophical approaches to the elusive interaction of language and thought. Emphasis will be placed on developmental and cross-cultural perspectives, and students will be encouraged to undertake independent research projects in their specific areas of interest.
Prerequisite: Linguistics 1 or permission of instructor.
Fall semester. Bloom.

108. Contemporary Approaches to Descriptive Linguistics.
A comparison of models of linguistic description with emphasis on recent developments in transformational grammar and generative semantics.
Prerequisite: Linguistics 1 or permission of the instructor.
Spring 1982.

180. Thesis



Literature

ROBERT ROZA, Coordinator

The Literature major is administered by a Literature Committee representing the Departments of Classics, English Literature, and Modern Languages and Literatures. The basic requirement for a major in Literature is work in two or more literatures in the original language. A student who intends to major in Literature will submit to the Literature Committee a proposed program of integrated work which sets forth the courses or seminars to be taken and the principle of coherence upon which the selection is based. The Committee will review the proposal and advise the student. Subject to the requirement of serious study of at least two literatures in the original language, one of which may be English, work in translation is encouraged, especially as it consists of thematic or comparative courses. In lieu of a regular course, the Literature Committee will consider proposals for an individual or cooperative project, for one or more research papers written as course attachments, or for the substitution of a thesis for course credit when these projects have as their purpose either the integration of work within the major or the relating of work outside the major to some portion of the major.

For a major in the Course Program the requirements are as follows:

1. A minimum of ten courses in two or more literature departments, including a substantial concentration of work — normally not fewer than five courses — in one of the departments. Only courses numbered 11 or above in Classics and Modern Languages and Literatures are counted as constituents of the Literature major. Of English courses numbered 2 through 10, only one may be counted for the major.

2. A senior essay planned early in the first semester of the senior year. The senior essay counts for at least one credit, usually for two credits, and is thus a paper of considerable scope or intensiveness in which a theme or result of the student's individual program of work is developed. In some cases the Committee may require that the essay be written in whole or in part in a language other than English.

3. A comprehensive examination taken in the second semester of the senior year.

For a major in the External Examination (Honors) Program the requirements are as follows:

Not fewer than five papers in Literature, including at least three in one department and significant work done in a foreign language, ancient or modern. Literature majors in the Honors Program are encouraged to include in their program a thesis with the purpose of integrating the work of the major in accord with the principle of coherence on which the program is based.

Prospective majors in Literature are urged to make their plans early so as to acquire the necessary linguistic competence by the junior year.

Mathematics

JAMES W. ENGLAND, Professor and Chairman
GUDMUND R. IVERSEN, Professor of Statistics
EUGENE A. KLOTZ, Professor
DAVID ROSEN, Professor†
J. EDWARD SKEATH, Professor
STEPHEN B. MAURER, Associate Professor
HELENE SHAPIRO, Assistant Professor

Mathematics is one of the most powerful tools available to the physical, biological, and social sciences, and to engineering. It is the aim of the Swarthmore Mathematics Department to enable those who so wish, to study mathematics as a discipline in its own right, while providing the skills and structural insights necessary to those in need of its power.

We live in a time when mathematics is cutting across more and more disciplines; there now exist such specialties as mathematical economics, mathematical linguistics, mathematical sociology, mathematical psychology, and mathematical biology, along with more traditional areas such as mathematical physics. Computer Science and Operations Research are disciplines which rely heavily on both mathematics and engineering. In recognition of all this, the Mathematics Department is interested in facilitating the creation of joint majors, and also in developing carefully worked out programs which involve concentration in mathematics and some other discipline.

Mathematics courses available to first semester freshmen include Math I (Statistics for Observational Data), Math 2 (Statistics for Experimental Data), Math 3 (Basic Mathematics), Math 5A or 5B (Calculus), Math 7 (Introduction to Computer Science), Math 9 (Discrete Mathematics), all with only normal high school preparation. Students may take Mathematics 11A by passing the Calculus I placement exam, Mathematics 12 by passing departmental Calculus II placement exam, or Mathematics 12H by passing the departmental Calculus II and Calculus III placement exams. All freshmen planning to enroll in Mathematics 3, 5A or 5B, 11A, 12 or 12H are required to take the appropriate departmental placement exams given during freshman orientation.

Programs for premedical students: Most medical schools require a year of college mathematics. Many require that one semester be calculus, and a few require the full year to be calculus. For a semester of calculus most premedical students should consider Math 4 or 5. In addition, premedical students should consider the precalculus courses 2 and 3, the second semester calculus course 11, the discrete mathematics course 9, and the post-calculus statistics course 15. Sometimes medical schools will give credit for calculus taken in high school, but only if it is acknowledged on the college transcript, as an AP or placement exam credit.

Programs for social science majors: Most leading graduate departments in the social sciences regard it as a definite plus if an applicant has had calculus, statistics, and computer experience. Economics graduate departments often go further, requiring a year of calculus and hoping for much more: multivariate calculus, linear algebra, differential equations, probability, operations research. Mathematics courses of particular interest to social science students included: Elementary, 1, 3, 4, 6; Intermediate, 5, 7, 9, 11, 12, 14, 15, 21, 22; Advanced, 25, 26, 28, 30.

Programs for students in Chemistry and Engineering: Students interested in Chemistry and Engineering might plan to take a minimum of Mathematics 5, 11, 22, and 30, or (with proper Advanced Placement), Mathematics 12, 22, and 30. Other courses of general interest to students in these areas include Mathematics 14, 15, 34, 51, and 52. Special interest courses

† Absent on leave, spring semester, 1981.

include Mathematics 24, 34, 41, 42, 57, or equivalent seminars.

Programs for physics majors: See Physics section for basic requirements. Other useful courses are Math 12, 14, 24, 25, 34, 41, 42, and 57. Appropriate seminars include Math 101, 102, 104, and 105.

Mathematics majors: The normal preparation for a major in mathematics consists of the sequence of Mathematics 5, 11, 12, and 22 (or with Advanced Placement 12 or 22).

A student who wishes to major in mathematics in Course must complete six advanced courses and the Senior Conference or the departmental comprehensive examination, in addition to the normal sequence of four courses just listed. An Honors candidate with a major in mathematics will normally take Math 101 and 102 in the junior year, and two other mathematics seminars in the senior year.

Mathematics majors are urged to study in some depth a discipline which makes serious use of mathematics. All mathematics students are urged to acquire some facility with the computer. Students bound for graduate school in mathematics should obtain a reading knowledge of French, German, or Russian.

Secondary accreditation: A Course or Honors major in mathematics will normally qualify a student for secondary school certification in mathematics. In view of the impact of computers on mathematics, the department urges prospective teachers to obtain a facility in the use of computers. A student who is not a mathematics major can achieve certification by taking the following courses: Math 5 and 11 and four advanced courses such as 12, 22, 23, and 24. All persons asking for certification should register for a directed reading with the department in order to become familiar with mathematics texts that will be helpful in their teaching career.

Statistics: Students who do not know calculus can take Math 1 or 2, with the choice determined by their intended major. Both courses lead to Math 6 on multivariate statistical analysis. Students who know calculus should take Math 15 and students with a strong background in mathematics can take the more theoretical Math 25. Both courses lead to Math 21 on multivariate analysis. Students who want a seminar in statistics can take Math 111.

Computer Science: The Departments of Mathematics and Engineering are working together on a curriculum in computer science. This curriculum will be available by the fall of 1980, and will include the courses Math 7 and Math 9.

1. Statistics for Observational Data.

Data for one variable are examined through averages and measures of variation. Relationships between variables are studied using methods such as chi-square, rank correlation and regression analysis. The main examples are taken from sample surveys and governmental data, and the course is intended for students in political science, sociology, and related disciplines making use of observational data. The course does not satisfy any mathematics prerequisite, except for Math 6, nor can it be counted toward a major or minor in the Department.
Spring semester. Iversen.

2. Statistics for Experimental Data.

Data for one variable are examined through averages and measures of variation. Relationships between variables are studied using methods such as chi-square, rank correlation, analysis of variance and regression analysis. The main examples are taken from experimental research, and the course is intended for students in biology, psychology and related disciplines making use of experimental data. The course does not satisfy any mathematics prerequisite, except for Math 6, not can it be counted toward a major or minor in the Department.
Spring semester. Iversen.

3. Basic Mathematics.

This course focuses on two objectives (1) review and remedial work, and (2) preparation for calculus. Some special attention will be given to those whose previous experience with mathematics has not been entirely prosperous. Prospective students should take the Basic Skills Test during Orientation Week, preferably at the Math Exam time. (The results will be used to help determine both classroom topics and individual strengths and weaknesses.) Subject matter will be taken from logic,

algebra, trigonometry and geometry.
Fall semester. Klotz.

4. Calculus Concepts.

This course, which covers the basic concepts of one variable calculus, is particularly useful for biology and social science majors. Topics to be included are sequences, series, differentiation, integration, transcendental functions, and extremal problems.
Spring semester. Klotz.

5A, 11A. Calculus I and II.

The first semester will cover topics in differentiation and integration of functions of one variable with some applications. The second semester is a continuation of the first. Topics covered in the second semester include series, improper integrals, differential equations and techniques of integration. Math 11A may be taken in the fall semester by passing the departmental Calculus I placement exam. All students planning to enroll in 5A or 11A in the fall semester are required to pass the appropriate departmental placement exam.
Staff.

5B, 11B. Calculus and Matrices in APL.

This is an introductory mathematics course which presupposes the same high school preparation as 5A. Among the topics covered will be differentiation and integration of functions of one variable with applications, introductory approximation theory, selected topics in matrices and linear algebra. The notation will be APL and use will be made of the computer.
Year course. England.

6. Multivariate Statistical Analysis.

Given as a continuation of Math 1 or 2, the course deals mainly with the study of relationships among three or more variables. Included are such topics as multiple regression analysis, with multitude and partial correlation, several variable analysis of variance and the analysis of multidimensional contingency tables. The course ends with an introduction to Bayesian methods. The course does not satisfy any mathematics prerequisite nor can it be counted toward a major or minor in the Department.
Prerequisite: Math 1 or 2 or 15 or 25 or Econ 4 or Psych 13.
Fall semester. Iversen.

7. Introduction to Computer Science.

This course includes a brief survey of the computer science field, with detailed attention to algorithms and the structuring of programs. The approach will stress problem solving in general with programming implemented in a high level language (APL in 1980). This course is intended to form the normal introduction to computer science for students interested in this discipline and also to offer an introduction to the computer for students in the natural sciences, engineering, and mathematics.
Fall Semester. Klotz.

9. Discrete Mathematics.

An introduction to noncontinuous methods in mathematics, this course is of special value to students interested in computer science or applications of mathematics to the social and management sciences. Topics include sets, functions, number systems, induction, and an introduction to logic, counting methods, difference equations, finite probability, graph theory, and the algorithmic way of thinking. This course will be taught at a level of sophistication similar to Math 5 and 11, and may be taken before, during, or after calculus.
Fall semester. Maurer.

12. Linear Algebra.

The subject matter of this course consists of vector spaces, matrices and linear transformation with applications to solutions of systems of linear equations, determinants and the eigenvalue problem.
Prerequisite: A grade of C or better in Math II or a passing grade on the departmental Calculus II placement exam.

12H. Linear Algebra Honors Course.

This honors version of Mathematics 12 will be more theoretical, abstract, and rigorous than its standard counterpart (the subject matter will be equally as valuable in applied situations, but applications will not be dwelt upon). It is intended for students with exceptionally strong mathematical skills, and primarily for students who enter with BC Advanced Placement calculus courses.
Prerequisite: A grade of B or better in Math II or a passing grade on the departmental Calculus II placement exam.
Fall semester. Rosen.

14. Probability.

This course deals with the mathematical theory and concepts of probability including an introduction to stochastic processes.
Prerequisite: Math 5, 22, or permission.
Fall semester. Skeath.

15. Statistics.

This calculus-based introduction to statistics covers most of the same methods examined in Math 1 and 2, but the course is taught on a higher mathematical level. The course is intended for anyone who wants an introduction to the application of statistical methods.
Prerequisite: Math 5.
Fall semester. Iversen.

21. Multivariate Statistics.

Given as a continuation of Math 15 or 25, the course deals mainly with statistical models for relationships between variables. The general linear model, which includes regression, variance, and covariance analysis, is examined in detail. The course concludes with non-parametric statistics, sampling theory and Bayesian statistics.
Prerequisite: Math 15 or 25.
Not offered 1980-81.

22. Several Variable Calculus.

This course considers differentiation and integration of functions of several variables with special emphasis on two and three dimensions. It is the normal sequel to Math 11 and is a prerequisite for several other mathematics courses.
Prerequisite: Math 11, or 12.
Each semester.

22H. Several Variable Calculus Honors Course.

This honors version of Mathematics 22 will be more theoretical, abstract, and rigorous than its standard counterpart (the subject matter will be equally as valuable in applied situations, but applications will not be dwelt upon). It is intended for students with exceptionally strong mathematical skills, and primarily for students who have successfully completed Math 12H.
Prerequisite: A grade of C or better in Math 12H or permission of the instructor.
Spring semester. Skeath.

23. Higher Geometry.

Synthetic and analytic projective geometry will be considered axiomatically. Affine and Euclidean geometry will be developed as special cases.
Spring semester. Rosen.

24. Introduction to Modern Algebra.

The course will survey some of the important topics of modern algebra, such as groups, integral domains, rings, and fields.
Prerequisite: Math 12 or permission of the instructor.

25. Mathematical Statistics.

Based on probility theory, this course examines the statistical theory for the estimation of parameters and tests of hypotheses. Both small and large sample properties of the estimators are studied. The course concludes with the study of models dealing with relationships between variables including chi-square and regression analysis.
Prerequisites: Math 12 and 22.
Not offered 1980-81.

26. Modeling.

An introduction to the methods and attitudes of mathematical modeling. Since modeling in natural science and engineering is already taught in courses in those disciplines, applications in this course will be primarily to social and biological sciences. Various standard methods used in modeling will be introduced: differential equations, Markov chains, game theory, graph theory, computer simulation. However, the emphasis will be on how to apply these subjects to specific modeling problems, not on their systematic theory. The format of the course will include projects as well as lectures and problem sets.
Prerequisites: Math 12 and 22, or instructor's permission.
Spring Semester. Maurer.

28. Mathematical Programming.

Linear Programming and its extensions: the simplex method, duality, assignment problems, network flows, two-person game theory, and an introduction to non-linear programming. Numerous algorithms are discussed, and there will be opportunities for computer implementation. A different perspective on mathematical programming is available in Engineering/Economics 57, Operations Research. In comparison, Mathematics 28 is more advanced mathematically in that there is more emphasis

on theory, and linear algebra is used to present it. However. Engineering 57 is more extensive in that engineering economics and probabilistic decision models are also covered, and case studies are involved. A student may take both courses; together they form a strong introduction to the theory and practice of optimization. Prerequisites for Math 28: Math 12 and 22, or instructor's permission.
Not offered 1980-81.

30. Differential Equations.

An introduction to differential equations that includes such topics as: first order equations, linear differential equations, approximative methods, some partial differential equations.
Prerequisite: Math 11 or 12.
Spring semester.

33. Foundations of Real Analysis.

This course is designed to give the student an understanding of basic theorems of calculus. The student is also expected to learn how to construct a mathematical proof. This course is recommended for students majoring in mathematics in course and for students planning to major in mathematics in honors.
Spring semester.

34. Numerical Methods.

This course will deal with the numerical solution of various mathematical problems, pure and applied. The computer will be used extensively. Also listed as Engineering 24.
Prerequisite: Math 11, and E23 or equivalent.
Spring semester.

35. Data Structures.

Trees, lists, arrays, stacks, queues, sorting and searching, garbage collection, applications of use in doing algorithms in computer science (parsing, efficient storage and use of sparse matrices, etc.)
Fall semester. Not offered 1980-81.

37. Number Theory.

The theory of primes, divisibility concepts, and the theory of multiplicative number theory will be developed. Potential secondary school teachers should find this course valuable.
Prerequisite: permission of the instructor.
Fall semester. Shapiro.

39. Algorithms.

The construction, analysis, and theory of algorithms for solving mathematical problems. Algorithms for constructing all or random combinatorial objects, e.g., subsets, permutations, partitions. Algorithms on graphs, e.g., graph coloring and shortest paths. Complexity of algorithms and the theory of NP-Completeness. Overlap with Mathematics 28, Mathematical Programming, and Mathematics 35, Data Structures, will be minimized by avoiding lengthy discussion of algorithms studies in those courses.
Prerequisite: Math 9 and/or further courses in mathematics and computing.
Fall semester. Not offered 1980-81.

41. Groups and Representations.

An introduction to some of the applicable portions of the theory of groups and their representations. Of potential interest to students in chemistry, physics and engineering, as well as mathematics. This course may be combined with Math 65, Functional Analysis with Applications, to comprise an Honors paper in mathematics.
Spring semester. Not offered 1979-80.

51. Applied Analysis I.

Analytic functions, integration and Cauchy's Theorem, power series, residue calculus, conformal mapping, and harmonic functions. The emphasis of this course is on applications to the physical sciences.
Prerequisite: Math 22.
Fall semester. Rosen.

52. Applied Analysis II.

Fourier series, the Fourier transform, orthogonal functions, introduction to Hilbert space and operators. The motivation for these topics will be in partial differential equations arising in the physical sciences.
Prerequisites: Math 30; Math 51, or permission of the instructor.
Spring semester. Rosen.

57. Differential Geometry.

An introduction that will include surfaces, manifolds, curvature, Riemannian geometry. The algebra of tensors and differential forms will be developed as needed.
Prerequisite: Math 22.
Fall semester. England.

65. Functional Analysis with Applications.

Basic theorems on Banach and Hilbert spaces,

and spectral analysis of self-adjoint operators, will be the main topics covered in this course.

The emphasis of the course will be on applications of the material to quantum theory, and thus a certain amount of the subject matter will be presented informally. This course may be combined with Math 41, Groups and Representations, to comprise an Honors paper in mathematics.
Prerequisite: Math 51 or permission of instructor.

93. Directed Reading.

96. Thesis.

97. Senior Conference.
This half course is designed to give students an overview of all of their mathematics courses by solving a variety of mathematical problems. When offered, this course replaces the departmental comprehensive examination.
Half course credit.
Spring semester.

SEMINARS

101. Real Analysis.
This seminar concentrates on the careful study of the principles underlying the calculus of real valued functions of real variables.
Fall semester. Skeath.

102. Modern Algebra.
This seminar deals with the theoretical properties of such formal systems as groups, rings, fields and vector spaces. While these concepts will be illustrated by many concrete examples, the emphasis will be on the abstract nature of the subject.
Spring semester.

103. Complex Analysis.
A brief study of the geometry of complex numbers is followed by a detailed treatment of the Cauchy theory of analytic functions of a complex variable. Various applications are given and some special classes of functions, such as elliptic functions, are studied. Analytic continuation and the theory of Weierstrass are also discussed.
Fall semester. Not offered 1980-81.

104. Topology.
The subject matter of this seminar will include such topics as point set topology with some application, piecewise linear topology, homology and homotopy theory.
Spring semester. Not offered 1980-81.

105. Probability.
The purpose of this seminar is to give the mathematical background necessary for an understanding of the mathematical analysis of statistical data. In addition, the modern development of this subject provides a valuable application of the concepts and techniques acquired in the study of advanced calculus. The topics treated may include: the axiomatic approach, the use of Stieltjes integrals, correlation and regression, some special distributions, sampling theory, and a short introduction to the theory of statistical estimation.
Spring semester.

106. Combinatorics, Optimization and Algorithms.
A selection, in seminar format and at a higher level of sophistication, of topics related to Math 9, 28, 35, and 39. The emphasis will depend on student interest. Possible topics are: advanced enumeration, combinatorial structures (e.g., graphs, matroids, designs), optimization, game theory, social choice theory, theory of computational complexity. If slanted towards combinatorics and theory of algorithms, this seminar will be of special interest to those studying computer science. If slanted towards the other topics, it will be of special interest to those studying mathematical economics.
Prerequisite: Instructor's permission.

111. Mathematical Statistics.
Properties of random variables are studied together with ways of inferring about parameters in statistical models. Special emphasis is put on the study of models for relationships between random variables.
Fall semester. Iversen.

Medieval Studies

Coordinator: **BERNARD S. SMITH**

This program offers an opportunity for a comprehensive study of European and Mediterranean civilization from the fourth century to the fifteenth. The period, which has a critical importance for the understanding of Western culture, can be approached best through a combination of several disciplines. Hence eight Departments (Art, Classics, English Literature, History, Modern Languages, Music, Religion, and Philosophy) cooperate to provide a course of study which may be offered as a major in either the course Program or the External Examination (Honors) Program.

For a major in the Course Program the requirements are as follows:

1. Latin 14, Mediaeval Latin
   1 course in Medieval History (History 11 or 12)
   Either Religion 36/Philosophy 19 or History 14

The prerequisites for the courses listed above are:

Latin 1-2 or the equivalent; an introductory history course; Philosophy 1.

2. Five other courses chosen from three of the following fields:

   Art (15, 16, 17).
   History (11, 12, 13, 14, 15).
   Religion (35, 36).
   Literature (Classics 35; English 19, 20, 31, 81; CEL 13, French 20 and 30; Spanish 30).
   Music (15).
   Other courses appropriate to Medieval Studies that are from time to time included in departmental offerings.
   Directed readings in medieval subjects.

3. A student may write a thesis as a substitute for a course during the first semester of the senior year.
4. The student must pass a comprehensive examination in the senior year based on courses taken in the medieval field. The examination includes a section of Latin translation.

For a major in the Honors Program the requirements are as follows:

1. The student must satisfy the language and distribution requirements of the program, as listed above, by appropriate courses or seminars. Some work in one or more of the fields, included in the program must be done before admission to the Program.
2. Seminars may be chosen from the following: Philosophy 110 (Medieval Philosophy), History 111 (Medieval Europe), Art 117 (Gothic Art), English 102 (Chaucer and Medieval Literature) or French 100 (Littérature du Moyen-Age).
3. By attachments to the courses listed above, and by writing a thesis, the student may expand the possibilty of work in the Honors Program beyond these five seminars.

The minor program should be planned with the coordinator so as to insure a close relation to the major. No minor in Honors is offered. Students wishing to minor in subjects included in this field should take them as minors in the department in which they are normally offered.

Modern Languages and Literatures

GEORGE C. AVERY (German), Professor
GEORGE KRUGOVOY (Russian), Professor
PHILIP METZIDAKIS (Spanish), Professor*
JEAN ASHMEAD PERKINS (French), Professor and Chairman, 1983-86††
ROBERT ROZA (French), Professor†††
FRANCIS P. TAFOYA (French and Spanish), Professor and Chairman, 1980-83
EUGENE WEBER (German), Professor
THOMPSON BRADLEY (Russian), Associate Professor†
JOHN J. HASSETT (Spanish), Associate Professor
SIMONE VOISIN SMITH (French), Associate Professor†
TATIANA M. COSMAN (Russian), Assistant Professor (part-time) and Director of the Language Laboratory
MARION J. FABER (German), Assistant Professor
GEORGE MOSKOS (French), Assistant Professor
CONCHITA ALBORG DAY, Lecturer**
JANE K. FRANCIS, Lecturer
MARY K. KENNEY (Spanish), Lecturer
CECILIA CHIN LEE (Chinese), Lecturer
ELKE PLAXTON (German), Lecturer
PATRICE TERRONE, Assistant

The purpose of the major is to acquaint students with the important periods and principal figures of the literatures taught in the Department, to develop an appreciation of literary values, to provide training in critical analysis, and to foster an understanding of the relationship between literary phenomena and the historical and cultural forces underlying the various literary traditions. In addition to demonstrated competence in the language, a foreign literature major will normally complete seven credits in literature courses or seminars, take Special Topics, and pass the comprehensive examination. Students whose interests lie primarily in language or civilization are advised to consider the possibility of a Special Major in combination with Linguistics, History, or some other appropriate department. Students interested in studying literature in more than one language are encouraged to consider a Literature major.

Courses numbered 1B through 8 are primarily designed to help students acquire the linguistic competence necessary to pursue literary studies in a foreign language through work with the language and selected literary texts. For a detailed description of the orientation in these courses see the Explanatory Note on language courses below. Courses numbered 11 or above emphasize the study of literature as a humanistic discipline as well as competence in the spoken and written language.

Students who plan to major in a foreign language and its literature are advised to present sufficient credits on admission to enable them to enroll in courses numbered 11 and 12 in their freshman year. Students who enter with no previous knowledge of the language and are interested in majoring in a foreign literature should register for the intensive language courses (1B-2B) in the

* Absent on leave, fall semester, 1980.
** Fall semester, 1980.
† Absent on leave, spring semester 1981
†† Program Coordinator, Swarthmore Program in Grenoble, fall semester, 1980.
††† Program Coordinator, Swarthmore Program in Grenoble, spring semester, 1981.

freshman year. Language courses numbered 1B through 5 (8 in German) do not count toward the minimum of eight credits required for the major.

Students who wish to continue a language begun elsewhere will be placed at the course level where they will profit best according to their score in the College Entrance Examination or placement tests administered by the Department in the fall.

Prerequisites for majors are noted under the listing of each of the literatures taught. Exceptions to course requirements are made for those who show competence in the language of specialization. Students who speak French, German, Russian or Spanish fluently should consult with the Department before electing courses.

Majors are urged to elect supporting courses in other literatures, in history, philosophy, linguistics, or art history. The Department also recommends participation for a minimum of a summer and a semester in an academic program abroad. Linguistically qualified students may apply to the Swarthmore Program at the University of Grenoble, for one or two semesters in the sophmore or junior year. This program is particularly suited for majors in the humanities and the social sciences. Students competent in Spanish should consider the Hamilton College Program in Madrid, Spain, which is cooperatively sponsored by Swarthmore. Beginning in the academic year 1980-81 students may apply scholarship monies to designated programs of study abroad, in addition to the Hamilton College Program in Madrid and the Swarthmore Program in Grenoble (see Education Abroad, p. x).

Students wishing to receive a Teaching Certificate in French, German, Russian or Spanish should plan on taking the regular program of language and literature courses required for the major or show proof of the equivalent. In addition, they should take Linguistics 1 or a course in the history of the language offered in the Department Appropriate supporting courses which broaden knowledge and understanding of the foreign culture being studied are also recommended. Prospective teachers of a foreign language should plan to include a minimum of a summer and a semester abroad in their academic program.

Students planning to do graduate work are reminded that, in addition to the language of specialization, a reading knowledge of other languages is often required for admission to advanced studies.

Continental European and Spanish American Literatures (in translation)

Students acquainted with a particular foreign language are urged to elect an appropriate literature course taught in the original language. CEL/SAL courses provide the opportunity to study literature which cannot be read in the original. These courses may be used to satisfy the distribution requirements, but cannot be substituted for the 11 or 12 level courses to satisfy the departmental prerequisites for a major or minor in the original languages. In some cases CEL/SAL courses may form an appropriate part of supporting upper-level work, part of a Literature Major, or they may serve as the basis of preparation for an Honors paper. Students planning programs where such considerations might apply should consult with the Department.

Normally, at least one CEL or SAL course is offered each semester; these courses are announced before fall and spring registration. Other, cross-listed courses in foreign literature in translation are listed after SAL 50.

12R. Russian Thought and Literature in the Quest for Truth.

The development of Russian intellectual tradition as reflected in Russian philosophy and literature from the 18th century to the present. Brief consideration of Russian mediaeval literature and thought. Eighteenth century: secularization of culture. Nineteenth and twentieth centuries: philosophical and literary polemics within the framework of current secular ideologies and religious thought. Russia and the West and the dream of a Perfect World.

Not offered 1980-81. Krugovoy.

13R. The Russian Novel.

See Russian 13.

13. Mediaeval Comparative Literature.

The tension between ideals and their realization as reflected in the literature of the Middle Ages, especially the epic *(Roland, Cid, Nibelungen)* and the romance *(Tristan, Yvain, The Grail).*

Not offered 1980-81. Perkins.

20G. The German Novel Since 1945.

A study of intellectual, literary, and sociolgical currents in East and West Germany, Austria, and Switzerland since the end of World War II as they appear in representative works of prose fiction. Authors include Th. Mann, Böll, Günter Grass, Max Frisch, Uwe Johnson, Peter Handke and Christa Wolf. Lectures and discussions in English. German majors will be required to read some of the works in German.

Not offered 1980-81. Avery.

25R. Russian Folklore and Russian Culture.

A study of folk poetry in its cultural and artistic aspects. Folklore and the genesis of literature and civilization. Survivals of myth and ritual in Russian folk poetry and their significance for the understanding of the collective psychological dominants in Russian cultural outlook will be discussed. Special attention will be given to ritual poetry, tales, heroic epic and lyric poetry with extensive use of comparative evidence from non-Russian folk traditions. Representative texts will be analyzed in class with active participation by students.

Not offered 1980-81. Krugovoy.

50G. Studies in Modern German Literature.

Under this course title topics will be offered from year to year that reflect the richness and variety of literature in German-speaking countries, against the background of this century's dominant social and cultural crises. Courses to be offered in subsequent years include: The Novels of Thomas Mann; Modern German Criticism from Nietzsche to Benjamin; Women in Modern German Literature; German Expressionism, Austrian Writers of the 20th Century. In the fall, 1980, the topic will be:

Literature and Film in Weimar Germany. An examination of German culture from 1919-33, this course will consider examples of the rich and diversified literature of the period as well as masterpieces of the German Expressionist cinema. In addition to aesthetic principles, the intellectual and political trends and sociological realities mirrored in this art will also be of central interest. As necessary, there will be an extra class meeting bi-weekly for film viewing.

Fall semester. Faber.

50R. Russian Literature and Revolutionary Thought.

A study of continuity and change; the relationship between the major political and social movements and the writers before and after 1917. Special attention will be given to the post-revolutionary literary and political struggle in the 1920's and the literary revival of the 1960's.

Not offered 1980-81.

50S. Spanish Thought and Literature of the Twentieth Century.

The struggle between traditionalism and liberalism, its background and manifestations in Spanish thought and letters from the turn of the century through the Civil War to the present day. Emphasis on Unamuno, Ortega y Gasset, Federico García, Lorca, Camilo Jose Cela, Carmen Laforet, and Juan Goytisolo.

Not offered 1980-81.

SAL 50. Contemporary Spanish-American Literature.

A consideration of intellectual and social themes and artistic innovations which mark the coming into the mainstream of Spanish-American fiction. Representative authors from the various national literatures.

ARGENTINA: Borges, Cortázar; PERU: Vargas Llosa; COLOMBIA: García Márquez; GUATEMALA: Asturias; MEXICO: Fuentes, Rulfo, Pedro; CUBA: Carpentier.
Not offered 1980-81.

SAL 60. Spanish American Society Through Its Novel.
This course will explore the relationship between society and the novel in Spanish America. Selected works by Carlos Fuentes, Mario Vargas Llosa, Gabriel García Márquez, Miguel Angel Asturias and others will be discussed in conjunction with sociological patterns in contemporary Spanish America. See Sociology-Anthropology 60.
Not offered 1980-81. Hassett and Muñoz.

34. *Renaissance Comparative Literature.
See English Literature 34.

48. *Modern Drama.
See English Literature 48.

EXPLANATORY NOTE OF FIRST- AND SECOND-YEAR LANGUAGE COURSES:

A. Courses numbered 1-2 are designed for students who begin their study of the language in college and whose primary interest is the acquisition of reading skills:

1-2 combines the presentation of grammar with readings from the humanities (including literature), social sciences and sciences. Classes meet three times per week and are conducted in English. May be used to prepare for fulfilling the reading requirement of graduate schools but does not prepare students for intermediate or advanced courses in literature taught in the original language.

B. Courses numbered 1B-2B, 3B carry one and one-half credits per semester. Three semesters in this sequence are equivalent to two years of work at the college level. Designed to impart an active command of the language and combine the study or review of grammar essentials and readings of varied texts with intensive practice to develop the ability to speak the language. Recommended for students who want to progress rapidly and especially for those with no previous knowledge of the language and who are interested in preparing for intermediate or advanced courses in literature taught in the original language. Students who start in this orientation can major in a foreign language and literature not studied previously. These courses (a) meet as one section for grammar presentation and in small groups for oral practice with a native speaker of the language, and (b) may require periodic work in the language laboratory.

Chinese

1B, 2B. Introduction to Mandarin Chinese.
An intensive introduction to written and spoken Mandarin Chinese. Specifically designed to prepare students for continuing study in Taiwan, Hong Kong, or Middlebury Summer Language School.
Lee.

3, 4. Second-year Mandarin Chinese.
A two-semester course designed for students who have mastered over five hundred characters (800 words) and basic grammar. The course combines the study of grammar and oral practice with writing and readings in modern Chinese literary and expository prose. Not offered every year. Lee.

French

French may be offered as a major in the Course Program or as a major or minor in the External Examination (Honors) Program. Prerequisites for both Course students and Honors candidates are as follows: French 6 and 12, the equivalent, or evidence of special competence.

Recommended supporting subjects: see the introductory departmental statement.

Majors in the Course and Honors Programs, as well as minors in the Honors Program are expected to be sufficiently proficient in spoken and written French to do all of their work in French, i.e., discussions and papers in courses and seminars, and all oral and written examinations, including comprehensive and Honors examinations. Course majors are required to do Special Topics.

COURSES

NOTE: Not all advanced courses are offered every year. Students wishing to major or minor in French should plan their program in consultation with the Department.

1B, 2B, 3B. Intensive French.

For students who begin French in college. Designed to impart an active command of the language. Combines the study of grammar with intensive oral practice, writing, and readings in literary or expository prose. Prepares for intermediate and advanced courses in literature taught in the original language. Recommended for students who wish to acquire minimal linguistic competence for study abroad in the Swarthmore Program in France. See the explanatory note on language courses above as well as the description of the Swarthmore program at the University of Grenoble under *Education Abroad*. Normally followed by 5.

5, 5A. Composition and Diction.

Emphasis on oral fluency and writing proficiency. May be taken for single credit (5), or one and one-half credits with additional discussion sessions (5A). Prepares for French 6 and 12. Recommended for students who wish to study abroad at the university level.
Prerequisite: French 3B or the equivalent.
Each semester.

12. Introduction to Literary Studies.

An analytical approach to French literature through the study of particular genres or specific modes of expression. Selected works from Molière to Balzac.
Prerequisite: French 5, a score of 675 on the College Entrance Examination, or the equivalent with special permission.
Each semester.

15. Freshmen Seminar.

For freshmen only. Limited enrollment.
Prerequisite: a score of 700 or above in French, and special permission of the instructor.
Fall semester. Moskos.

16. Studies in Stylistics.

(formerly listed as 6) For majors or those who wish an advanced course to develop self-expression in the written and oral language. Original compositions are based on a stylistic study of texts by representative French authors from the 17th century to the present.
Prerequisite: French 5, 12, or the equivalent with special permission.
Each semester. Fall semester, Smith.

20. History of the French Language.

The development of the French language from its Latin origins to its current forms. Emphasis will be placed more on general patterns than on philological details. Texts of the various periods will be analyzed intensively. The course will be given in English; students must have a reading knowledge of French.
This course will satisfy the linguistics requirement for teacher certification and may be used for a Medieval Studies major.
Spring semester. Perkins.

25. L'Ancien Régime.

A social history of the 17th and 18th centuries, treating such topics as education, political

institutions, life at the court, Parisian culture and the development of social classes. Open to students with the equivalent of French 5.
Spring semester. Perkins.

28. La France Contemporaine.
A study of events and ideas which have shaped French society from the 19th century to the present. Selected French works in history, political science, sociology and literature.
Fall semester. Smith.

82. Colloquium.
Women Writers and their Specific Contributions.
Fall semester. Moskos.

91. Special Topics.
(for senior majors). Study of individual authors, selected themes, or critical problems.
Spring semester.

93. Directed Reading.

94. Thesis.

Courses to be offered in subsequent years:

30. Littérature du Moyen-Age.

35. L'Humanisme de la Renaissance.

42. Le Classicisme.

43. Le Théâtre.
Representative works from the Middle Ages to the Romantic period included.
Smith.

50. Le Roman avant la Révolution.

51. Les Philosophes.

60. Le Roman du 19e Siècle.
A study of innovations in techniques and form as well as the examination of moral problems arising from socio-political changes in 19th century France. Based primarily on the novels of Balzac, Stendhal, Flaubert, and Zola.
Moskos.

61. Romantisme.

65. Baudelaire, Rimbaud, Mallarmé, Appolinaire.
A study of Symbolism through its major poets.
Roza.

70. Théâtre Moderne.
Major trends in 20th century drama from Anouilh, Sartre to Beckett and Ionesco.
Roza.

71. Poésie Contemporaine.
From Apollinaire and Surrealism to Char and Saint John-Perse.
Roza.

72. Gide, Proust, Céline.

73. Littérateurs Engagês.
A study of the literature of commitment before and after World War II. Principally an examination of the literary manifestations of French Existentialism. Includes works by Malraux, Sartre, de Beauvoir, Camus, and Frantz Fanon or others.
Tafoya.

74. Le Nouveau Roman.

75. Proust and Joyce.

SEMINARS

All seminars to be offered in a particular year will be announced in advance. Preparation of topics for External Examinations (Honors) may be done by appropriate courses plus attachments only when seminars are not available. Students preparing for External Examinations should consult with the Department on the suitability and availability of attachments.

100. Littérature du Moyen-Age.
Old French readings in lyric poetry, theatre and romance.
Perkins.

101. La Renaissance.
Prose works of Rabelais, Marguerite de Navarre, and Montaigne. Poetic innovations from Marot through the Pléiade.
Smith.

102. Le Théâtre Classique.
1. Aristotle, Corneille and Racine: a study of "the Tragic" and the theories of tragedy. 2. Molière.
Smith.

103. L'Age des Lumières.
Concentrating on Diderot and Rousseau.
Perkins.

104. Stendhal et Flaubert.
Moskos.

105. Proust.
Style and vision in *La Recherche du Temps perdu.*
Roza.

106. Poésie Symboliste.
From Baudelaire to Apollinaire.
Roza.

108. Le Roman du 20e Siècle.
Major innovations in form and theme from Gide and Proust to the New Novel.
Fall semester. Roza.

109. Le Romantisme.
Spring semester. Moskos.

180. Thesis.

German

German may be offered as a major in the Course Program or as a major or minor in the External Examination (Honors) Program. Prerequisites for both Course students and Honors candidates are as follows:

Required: German 11 or 12, or equivalent work.

Recommended supporting subjects: see the introductory departmental statement.

With minor exceptions, the language of instruction in courses numbered 11 and above is German. Students are expected to have a sufficient command of the language to be able to participate in class discussions and do written work in German. Course majors are required to do Special Topics.

COURSES

NOTE: Not all advanced courses or seminars are offered every year. Students wishing to major or minor in German should plan their program in consultation with the Department.

All courses listed under Groups I and II are open to students after either German 11 or 12. The courses listed under Group II are offered on a regular two-year sequence. Majors in Course are required to select a minimum of four courses from Group II.

1, 2. German Reading and Translation.
For students who wish to acquire the fundamentals of German grammar and a reading knowledge of the language. This two-semester course is a terminal sequence. See the explanatory note on language courses above.

1B, 2B, 3B. Intensive German.
For students who begin German in college. Designed to impart an active command of the language. Combines the study of grammar with intensive oral practice, writing, and readings in literary or expository prose. See the explanatory note on language courses above. Normally followed by 8, 11 or 12.

4. Intermediate German.
For entering students with high school language training equivalent to 3B. Review of grammar, literary readings of moderately difficult texts, such as Brecht's *Gedichte,* Dürrenmatt's *Die Physiker,* Stifter's *Brigitta.* Regular written assisgnments. Normally followed by German 8, 11, or 12. Admission contingent upon departmental testing or permission of the instructor.
Fall semester. Faber.

8. Writing and Speaking German.
Oral discussions and writing practice based on general and literary topics of contemporary interest. For students who want to consolidate their skills of expression. Recommended for German majors. Can be taken concurrently with German 11 or 12.
Prerequisite: German 3B, 4, or by departmental placement test.
Spring semester. Avery.

GROUP I

11. Introduction to German Literature (early 20th century).
An introductory course which emphasizes critical and analytical reading of literature. Representative poetry, drama, and fiction from the beginning of the 20th century, including works by Rilke, Lasker-Schüler, Kafka, Brecht, and Schnitzler.
Prerequisite: German 3B, 4, 8 or equivalent work.
Spring semester. Avery.

12. Introduction to German Literature (the Age of Goethe).
An introduction to German literature through close reading of selections from the second half of the 18th and the early part of the 19th century. Representative works of Goethe, Schiller, the Romantics.
Fall semester. Faber.

50. Die Deutsche Lyrik.
Readings in the major German poets.
Not offered 1980-81.

63. Goethe's Faust.
An intensive study of *Faust I* and *II*.
Not offered 1980-81. Weber.

83. Kafka and Brecht.
A study of the principle works of each author with emphasis on the emergence of major themes and the examinations of literary craftsmanship. Kafka's notebooks and journals and Brecht's journals and critical writings will be considered in the context of the authors' cultural and social environment.
Not offered 1980-81. Avery.

91. Special Topics (for senior majors).
Study of individual authors, selected themes, or critical problems. Open to qualified upper-level students.
Spring semester.

GROUP II

60. Aufklaerung und Sturm und Drang.
The German Enlightenment and various reactions to it. Authors read include Gellert, Lessing, Klopstock, Wieland, Herder, the early Goethe and the early Schiller.
Not offered 1980-81. Weber.

62. Weimarer Klassik.
Major writings of the authors associated with the Weimar Court from the time of Goethe's arrival in 1775. An investigation in the main of the works and concerns of the later Goethe, Schiller, and Herder.
Fall semester. Weber.

70. Die Deutsche Romantik.
See German 105 below.

80. Klassiker der Moderne.
A study of German literature from the beginnings of Modernism through World War I. Authors include Hofmannsthal, Rilke, George, Schnitzler, Trakl, Sternheim, and Thomas Mann.
Not offered 1980-81. Avery.

82. Literatur des zwanzigsten Jahrhunderts.
German literature from the twenties to the present with emphasis on the continuity of the modern tradition under the impact of political exile and World War II. Authors include

Brecht, Thomas Mann, and post-World War II writing in Austria, Switzerland, East and West Germany.
Spring semester. Avery.

Courses to be offer in subsequent years:

52. Das Deutsche Drama.

72. Literatur des neunzehnten Jahrhunderts.
German literature from the end of Romanticism to the beginnings of Modernism.

84. Rilke, Hofmannsthal, George.

SEMINARS

All seminars to be offered in a particular year will be announced in advance. Preparation of topics for External Examinations (Honors) may be done by appropriate courses plus attachments only when seminars are not available. Students preparing for External Examinations should consult with the Department on the suitability and availability of attachments.

104. Goethe.
A study of Goethe's major works in the context of his life and times. (The seminar does not include *Faust.*)
To be offered 1981-82. Weber.

105. Die Deutsche Romantik.
Romanticism as the dominant movement in German literature, thought, and the arts in the first third of the 19th century. Authors include Tieck, Novalis, Hölderlin, Kleist, Brenanto, Eichendorff, the early Büchner, and Heine. Also offered as a course. See 70.
Spring semester. Faber.

107. Moderne Prosa.
The development of German prose narrative since 1900 as reflected in works by Schnitzler, Hofmannsthal, Rilke, Mann, Kafka, Döblin, Karl Kraus and R. Walser.
Fall semester. Avery.

Russian

Russian may be offered as a major in the Course Program or as a major or minor in the External Examination (Honors) Program. Prerequisites for both Course students and Honors candidates are: Russian 6, 11, 12, and 13, or equivalent work.
Recommended supporting subjects: see the introductory department statement.

NOTE: Not all advanced courses or seminars are offered every year. Students wishing to major or minor in Russian should plan their program in consultation with the Department. Course majors are required to do Special Topics.

1B, 2B, 3B. Intensive Russian.
For students who begin Russian in college. Designed to impart an active command of the language. Combines the study of grammar with intensive oral practice, writing, and readings in literary or expository prose. See the explanatory note on language courses above. Normally followed by 6, 11, and 12.

6. Advanced Russian.
For majors and those primarily interested in perfecting their command of language. Advanced conversation, composition, translation, and stylistics. Readings include short stories and newspapers. Conducted in Russian.
Spring semester. Krugovoy.

11. Introduction to Russian Literature.
Old Russian literature and its place within European literature. 18th century: Classicism and Sentimentalism. 19th century: Romanticism and Golden Age of Russian poetry. Pushkin, Lermontov, Gogol. Lectures and discussions in Russian.
Fall semester. Krugovoy.

12. Introduction to Russian Literature.
19th and 20th century Russian literature to 1918, and its place within European literature. Realism and literary tendencies in the first two

decades of the 20th century. Turgenev, Dostoevsky, Tolstoy, Chekhov, Bunin, Bely. Silver Age of Russian poetry. Lectures and discussions in Russian.
Spring semester. Krugovoy.

13. The Russian Novel.
Continuity and change in the development of the novel in the 19th century and in the post-revolutionary period. Lectures and readings in English. Russian majors will be required to read a part of the material in Russian.
Fall semester. Bradley.

16. History of the Russian Language.
An introductory course. A study of the origin of the Russian language and its place among the other modern Indo-European and Slavic languages. The uses of philology and linguistics for the ideological and stylistic analysis of literary texts.

Satisfies the linguistics requirement for teacher certification. The course will be offered in response to manifest student interest.
Krugovoy.

91. Special Topics.
(For senior majors.) Study of individual authors, selected themes or critical problems.

93. Directed Reading.

SEMINARS

101. Tolstoy.
102. Russian Short Story.
103. Pushkin and Lermontov.
104. Dostoevsky.
105. Literature of the Soviet Period.
106. Russian Drama.
107. Russian Lyrical Poetry.
108. Modern Russian Poetry.

Spanish

Spanish may be offered as a major in the Course Program or as a major or minor in the External Examination (Honors) Program. Prerequisites for both Course students and Honors candidates are as follows:

Required: Spanish 11, 13, or equivalent work.

Recommended supporting subjects: see the introductory departmental statement.

Majors are expected to speak Spanish with sufficient fluency to take part in discussion in courses and seminars in the language and to pass all oral comprehensive or oral Honors examinations in Spanish. Course majors are required to do Special Topics.

COURSES

NOTE: Not all advanced courses are offered every year. Students wishing to major or minor in Spanish should plan their program in consultation with the Department.

1B, 2B, 3B. Intensive Spanish.
For students who begin Spanish in college. Designed to impart an active command of the language. Combines the study of grammar with intensive oral practice, writing, and readings in literary or expository prose. See the explanatory note on language courses above. Normally followed by 5, 11, or 13.

5. Composition and Diction.
For majors and others who wish advanced courses in which the emphasis is not primarily literary. An effort is made to correct faulty pronunciation and to improve both oral and written self-expression in the language.
Each semester. Hassett.

11. Introduction to Spanish Literature.
A study of representative prose fiction, poetry, and drama of the 19th and 20th centuries (works by authors such as Espronceda, Zorrilla, Bécquer, Pérez Galdós, Unamuno, Baroja, Lorca, etc.). Discussions, papers.
Prerequisite: Spanish 3B, the equivalent, or special permission.
Fall semester. Day.

13. Introduction to Spanish American Literature.
A study of representative prose fiction, poetry and drama of the 19th and 20th centuries (works by Echeverría, Sarmiento, Martí, Silva, Darío, Lugones, Sánchez, Lillo, Neruda, Vallejó, Huidobro, Rulfó, García Marquez). Discussions, papers.
Spring semester. Hassett.

NOTE: Spanish 11, 13, the equivalent, or consent of instructor, are prerequisite for the courses in literature that follow.

30. La Literatura Medieval.
From the *Poema del Cid* to *La Celestina.* Also included are works by Gonzola de Berceo, Don Juan Manuel, el Arcipreste de Hita, and Jorge Manrique.
Spring semester. 1982. Metzidakis.

40. El Teatro del Renacimiento y del Siglo de Oro.
Special emphasis will be placed on the outstanding dramatists of the Golden Century (Lope de Vega, Tirso de Molina, Ruiz de Alacón, Cadéron, etc.)
Fall semester. 1981. Metzidakis.

44. Cervantes.
The works of Cervantes with special emphasis on the *Quijote.*
Spring semester. Metzidakis.

60. La Novela en el Siglo XIX.
Realism and Naturalism in 19th century prose fiction. Works by Alarcón, Valera, Pérez Galdós, Pardo Bazán, Clarín, Blasco Ibáñez and others.
Spring semester. 1982. Metzidakis

70. La Generación del 98.
Studies in the works of Valle-Inclán, Azorín, Baroja, Unamuno, Benavente and Antonio Machado.
Fall semester. Day.

74. Literatura Española de posquerra.
Spanish prose fiction and poetry of the last forty years. Novels by Cela, Delibes, Goytisolo, Martín Santos, Benet, García Hortelano and Fernández Santos. The poetry of Blas de Otero, José Hierro, Gabriel Celaya, Luis Rosales and Dionisio Ridruejo. The theater of Buero Vallejo and Alfonso Sastre.
Spring semester. Metzidakis.

75. Teatro hispanoamericano contemporáneo.
After a brief introduction to the origins of Spanish American theatre this course will focus principally on representative works by some of the most important figures of twentieth century Spanish American Theatre. Our selection of dramatists will include Florencio Sánchez, Rodolfo Usigli, René Marqués, Egon Wolff, Emilio Carballido, Carlos Solórzano and Enrique Solary Swayne.
Fall semester. Hassett.

76. La Poesía Hispanoamericana en el Siglo XX.
A study of the poetry of Mistral, Agustini, Ibarboutou, Storni, Vallejo, Huidorbro, Gorostiza, Paz, Nicholás Guillén, Neruda, Borges, and others.
Fall semester. 1981. Staff.

79. El cuento hispanoamericano.
The Spanish American short story from the early 19th century to the present. Representative authors include Echevarría, Carrasquilla, Payró, Lillo, Portillo y Rojas, Roa Bastos, Borges, Bioy Basares, Rulfo Cortázar, and others.
Spring semester. Hassett.

91. Special Topics.
Study of individual authors, selected themes or critical problems. Topic in Spanish American literature to be announced.
Spring semester. 1982. Staff.

Courses to be offered in subsequent years:

7. Foñetica Española.

42. La Poesía del Renacimiento y del Siglo de Oro.

71. Literatura Española Contemporánea.

72. La Novela Española de la Posguerra.

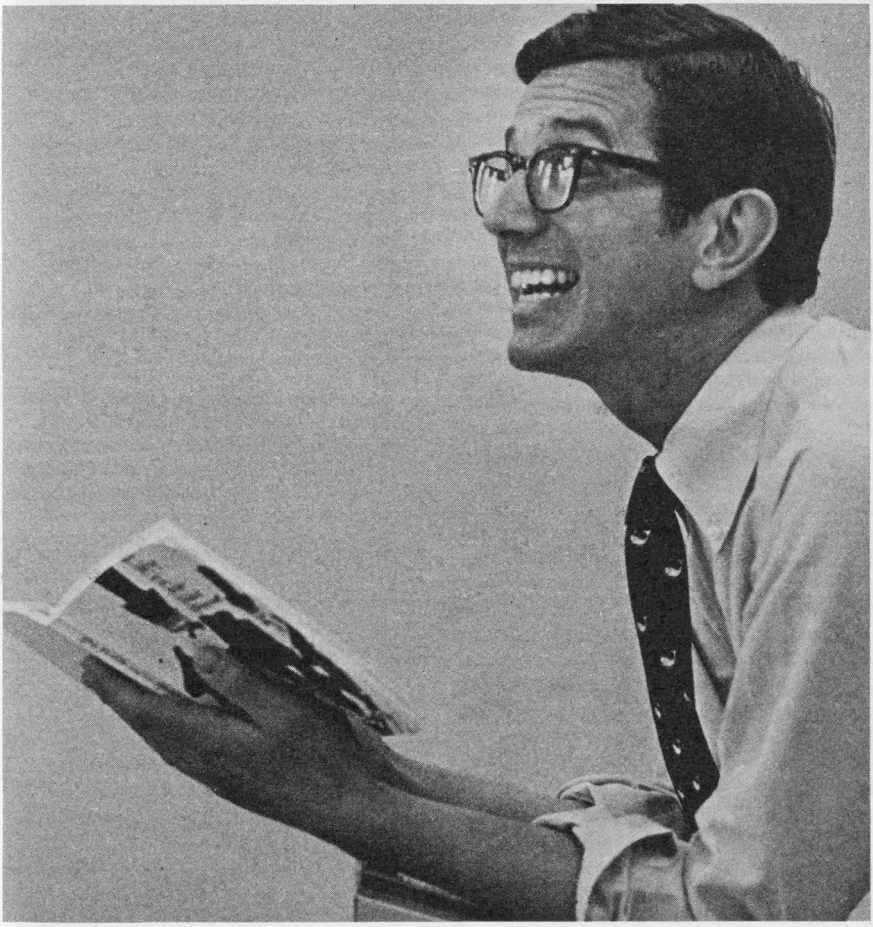
73. Unamuno.

77. La Novela Hispanoamericana en el Siglo XX.

78. La Novela Mexicana Social del Siglo XX.

EXTERNAL EXAMINATION (HONORS) PROGRAM

Honors papers may be prepared by attachments to courses. Consult the Department for suitability and availability.



Music

PETER GRAM SWING, Professor
PATRICIA WITYK BOYER, Associate Professor of Dance and Director of the Dance Program†
JAMES D. FREEMAN, Associate Professor and Chairman
ANN L. KOSAKOWSKI, Assistant Professor
GERALD LEVINSON, Assistant Professor
CAROLYN REICHEK, Associate in Performance (Dance)
PAULA SEPINUCK, Associate in Performance (Dance)
ROBERT M. SMART, Associate in Performance (Music)

The study of music as a liberal art requires an integrated approach to theory, history and performance, experience in all three fields being essential to the understanding of music as an artistic and intellectual achievement. Theory courses train the student to work with musical material, to understand modes of organization in composition and to evolve methods of musical analysis. History courses and seminars introduce students to methods of studying the development of musical styles and genres, and the relationship of music to other arts and areas of thought. The department encourages students to develop performing skills through private study and through participation in the orchestra, chorus and chamber music coaching program which it staffs and administers. The Department also assists instrumentalists or singers to finance the cost of private instruction. Credit may be granted under the provisions for Creative Arts.

Students wishing to combine instrumental or vocal studies outside the College with a major in music at Swarthmore can, with special permission from the department and the Provost, elect a five-year plan of study, thus reducing the normal number of courses to be taken per semester.

Two semester courses in theory and one semester course in history are prerequisite for acceptance as a major. Majors will normally take five semester courses in theory (including Music 61), three semester courses in history (including Music 15, 16), and meet the basic piano requirement.

Major in the External Examination (Honors) Program: A student intending to major in the Honors Program will generally stand for four papers in music. The department strongly recommends that one paper be a thesis or research project. Music 61, 62, may be used as the basis of a paper. Papers in history can be prepared by taking a history course with a concurrent or subsequent attached unit of additional research, or by directed reading, or by a tutorial.

Minors in the Honors Program: A student intending to minor in the Honors Program will generally stand for two papers in music. Two semester courses in theory and one semester course in history are prerequisite for a minor. Music 2 may, with permission of the Department, be substituted for the theory prerequisite.

Language Requirements for Graduate Schools: Students are advised that graduate work in music requires a reading knowledge of French and German. A reading knowledge of Latin is also desirable for students planning to do graduate work in musicology.

Proficiency on an instrument: All majors in music will be expected to play a keyboard instrument well enough to perform at sight a two-part invention of J.S. Bach and a first movement of an easy late 18th or early 19th century sonata. By the end of the junior year they should be able to read chamber music scores, vocal music in four clefs, and realize figured basses. The department recommends that majors take one or two semesters of

† Absent on leave, spring semester, 1981.

Music 39 to develop these skills. Students with exceptional proficiency in an instrument other than the piano, or in singing, will not be expected to meet the performing standards of pianists.

The basic piano program: This program is designed to develop keyboard proficiency to a point where a student can effectively use the piano as a tool for study, also to help students meet the keyboard requirements outlined above. It is open to freshmen and sophomores planning to major in music. No academic credit is given for basic piano.

CREDIT FOR PERFORMANCE

A student who has taken Music 1, Music 2, or Music 11-12 (or who has equivalent prior training) has the option to receive credit for study of an instrument or voice, participation in the Department's chamber music coaching program, participation in the Swarthmore College Orchestra, and participation in the Swarthmore College Chorus. The amount of credit received will normally be a half-course in any one semester, and will usually be granted only to students participating for a full year in a particular activity. Students applying for credit will be given an audition at the beginning of the semester and will fulfill requirements established for each activity, i.e., regular attendance at rehearsals and performances and participation in any supplementary classes held in connection with the activity. Students will be graded on a credit/no credit basis.

A student applying for credit to study an instrument or voice (Music 37 — Individual Instruction) will first demonstrate to the Department ability to undertake such study at least at an intermediate level. The student will arrange to work with a teacher of her/his choice, subject to the approval of the Department, which will then supervise the course of study. The teacher, also the student, will submit written evaluations at the close of the semester to be used by the Department in making its evaluation. The Department will pay half the cost of instruction, and has scholarship money to provide additional subsidy for particularly deserving students.

The Department views individual instruction as related to performance. A student will be expected to perform as a soloist, or in a chamber music ensemble, in one or more concerts or workshops, including one directly supervised by the Department during the semester for which credit is sought.

Music 37 is open to students who are members of the Swarthmore College Orchestra, Chorus, the Gospel Choir or the College Jazz Band. Players of non-orchestral instruments for instance, pianists and guitarists, who are not in one of the groups listed above, will be accepted into the program if they are majors in the Department, or are enrolled in a History or Theory course at Swarthmore College, either in the semester for which they are seeking credit, or in a contiguous semester.

COURSES AND SEMINARS

1. Introduction to Music.

A course designed to teach intelligent listening. The course assumes no prior training in music. Open to all students without prerequisite.
Spring semester. Swing.

2. Introduction to Music.

A course that approaches listening and analysis through concentration on musical fundamentals: reading notation and developing or expanding aural perception of pitch, rhythm, structure, phrasing and instrumentation. The course assumes no prior training in music.
Open to all students without prerequisite.
Fall semester. Freeman.

6. J.S. Bach.

A study of selected instrumental and vocal

compositions. Open to all students without prerequisite.
Fall semester. Swing

8. Music of the Orient.
Introduction to music and musical theories of the Near East and the Far East. Guest lecturers in special fields will meet with the class at appropriate intervals. The course will assume some familiarity with music on the part of students.
Spring semester. Levinson.

THEORY AND COMPOSITION

The Theory Cycle

The theory cycle is a series of three full-year courses normally taken in sequence. Work in counterpoint, harmony, orchestration, strict composition, sight-singing, dictation, analysis and theory construction is coordinated with the study of pre-tonal, tonal and post-tonal compositions.

Students entering the cycle are expected to know traditional rhythmic notation, major/minor scales, and be able to play or sing at sight simple lines in treble and bass clef.

Music 13-14 and 61, 62 can be taken concurrently by students beginning the cycle in their junior year, but only with permission of the Department.

11, 12. First Year Theory.
Two lectures, two drill sections per week. Fundamentals of tonal counterpoint and harmony. Written musical exercises include composition of original materials as well as commentary on excerpts from the tonal literature. Listening assignments coordinated with written work.
Prerequisite: Music 2 (or the equivalent).
Year course. Kosakowski.

13, 14. Second Year Theory.
Continued work with the tonal literature at an intermediate level. Detailed study of selected works with assignments derived from these works.
Prerequisite: Music 11-12 (or the equivalent).
Year course. Levinson.

61. Third Year Theory.
Detailed study of a limited number of works both tonal and non-tonal, with independent work encouraged.
Prerequisite: Music 13-14 (or equivalent).
Fall semester. Kosakowski.

62. Third Year Theory.
Projects in the analysis of tonal and non-tonal works.
Spring semester. Kosakowski.

Composition

41. Composition.
Fall and spring semesters. Levinson.

HISTORY OF MUSIC

15. Introduction to the History of Music (I).
Topics in music of the Middle Ages and the Renaissance, with emphasis given to the analysis and performance of selected compositions. This course is also concerned with studying the relationship of music to the art and thought of the times, and the function of music in the Roman Catholic liturgy.
Prerequisite: Music 2 (or the equivalent).
Fall semester. Swing.

16. Introduction to the History of Music (II).
Topics in music of the 17th, 18th and 19th centuries.
Prerequisite: Music 2 (or the equivalent).
Spring semester. Freeman.

22. Twentieth-Century Music.
An examination of a selected group of compositions and of their historical and theoretical premises.
Prerequisite: Music 2 (or the equivalent).
Fall semester. Levinson.

28. W.A. Mozart.
A study of representative works in the light of modern style criticism. A reading knowledge of French or German is desirable.
Open to students with permission of instructor.

31. Opera.
An examination of the problems and relationship of opera and drama. Scenes from two or three operas will be prepared, staged, and studied in detail. Other operas from various periods will be examined in terms of the musico-dramatic problems encountered in the prepared scenes.
Prerequisite: Some vocal, dramatic or instrumental ability.

32. History of the String Quartet.
This course traces the development of the string quartet from the middle of the 18th century to the present through study and (wherever possible) performance of selected works.
Open to students with permission of the instructor.
Spring semester. Swing.

42. Lieder.
A study, through performance and analysis, of various solutions by various composers to the problems of relating text and music. Students should be moderately proficient either as singers or as pianists. A knowledge of German is required.

43. Early Nineteenth Century Romanticism.
A study of the origins and rationale of musical Romanticism in the first half of the 19th century. A reading knowledge of French or German will be very helpful.

45. Projects in Performance.
A study of chamber repertoire. Performance practice and problems in music of the 17th- through the 20th-centuries will be examined in terms of analysis, research, and rehearsal. Ability to perform instrumentally or vocally is required.
Fall semester. Freeman.

92. Independent Study.

93. Directed Reading.

95. Tutorial.
Special work in composition, theory, or history. One or two credits.

96. Senior Thesis.
One or two credits.
Fall and spring semesters.

PERFORMANCE (MUSIC)

NOTE: All performance courses are for half-course credit per semester. See p. 72 and p. 181 for general provisions governing work in performance under the provisions for Creative Arts.

33. Elements of Musicianship.
Sight-singing, rhythmic and melodic dictation. Open to all students and may be taken with or without credit.
Both semesters. Kosakowski.

34. Performance (chamber music).
Both semesters. Freeman.

35. Performance (orchestra).
Both semesters. Freeman.

36. Performance (chorus).
Both semesters. Swing.

37. Individual Instruction.
Both semesters.

39. Figured Bass and Score Reading.
Both semesters. Smart.

40. Conducting.
Spring semester. Freeman.

DANCE

1. Introduction to Dance.

A course in dance technique with emphasis on alignment and movement analysis and includes introductory theory of dance as an art form. The class meets three hours weekly and is a prerequisite (or equivalent prior training) for all dance courses except Dance 23. The course receives no academic credit but may be substituted for required physical education.
Each semester. Boyer and Sepinuck.

2. Beginning Ballet.

The class meets three hours weekly, receives no academic credit, but may be substituted for required physical education.
Prerequisite: Dance 1 (or equivalent prior training).
Fall semester. Boyer.

4. Intermediate Dance Technique.

Approaches to various styles of dance technique. The class meets three hours weekly, receives no academic credit but may be substituted for required physical education.
Each semester. Boyer, Reichek, and Sepinuck.

5. High Intermediate Dance Technique.

The class meets two hours weekly, receives no academic credit but may be substituted for required physical education.
Each semester. Reichek and Sepinuck.

10. Dance Improvisation.

This course is geared to improvisation both as a performance technique and as a tool for dance composition. It gives the student a chance to expand individual movement vocabulary and work with others as a part of a cohesive ensemble. The class meets two hours weekly and receives no academic credit.
Spring semester. Sepinuck.

11. Dance Composition.

A study of the priniples of dance composition through exploration of the elements of dance, movement invention and improvisation, development of movement themes, and choreographic structure. Students will be expected to read, create movement studies, and choreograph a full length dance as a final project. A course in dance technique must be taken concurrently.
Fall semester. Boyer.

23. Twentieth Century Dance.

A study of the evolution of contemporary dance as a performing art. The course begins with a brief historical survey of dance prior to the turn of the century. Emphasis is placed on the artists of the twentieth century whose works influenced the shape of modern dance and ballet in their present form. Distinguished lecturers in special areas meet with the class at appropriate intervals. Open to all students without prerequisite.
Not offered 1980-81.

30. Performance (Dance).

This course includes dance technique on the advanced level, basics of production, choreography and performance. One half course credit may be received each semester with participation in scheduled performances. One course credit per semester may be awarded to those students who (not receiving credit for Dance Composition) choreograph a work which is performed at a public concert. Admission by audition or invitation of the dance faculty.
Each semester. Boyer, Reichek and Sepinuck.

Philosophy

HUGH M. LACEY, Professor and Chairman
HANS OBERDIEK, Professor†
DAVID LACHTERMAN, Associate Professor
CHARLES RAFF, Associate Professor
RICHARD SCHULDENFREI, Associate Professor
ROSEMARY DESJARDINS, Assistant Professor
MICHAEL KRAUSZ, Visiting Lecturer§***
GILMORE STOTT, Lecturer

Students majoring in philosophy must complete at least one course or seminar in each of these areas: (1) Logic, (2) Ancient or Modern Philosophy, and (3) Moral or Social Philosophy. Prospective majors should complete the Logic requirement as early as possible. Mastery of at least one foreign language is strongly recommended. Students majoring in the Course Program may be required to elect Philosophy 97.

1. Introduction to Philosophy.

Philosophical literature and methods of investigation are introduced through discussion of typical philosophical problems, such as: the problem of freedom, the arguments for the existence of God, the nature of logic and mathematics, the sources and limits of human knowledge, the justification of moral judgments. Readings include classical and current sources.
Introduction to Philosophy is a prerequisite for all other philosophy courses except Logic.
Each semester. The staff.

2. Introductory Seminar in Moral Philosophy.

A seminar closed to freshmen, an alternative to Philosophy 1. Enrollment limited to approximately ten students, chosen by lot.
Fall semester. Stott.

11. Ethics.

A study of the principal theories about value and moral obligation, and of their justification. The emphasis is systematic, but works of leading ethical philosophers, both classical and contemporary, will be read as illustrations of the major theories.
Fall semester. Oberdiek. *Spring semester.* Stott.

12. Logic.

An introduction to the principles of deductive logic with equal emphasis on the syntactic and semantic aspects of logical systems. Applications of logic to selected philosophical problems are also studied.
Fall semester. Lacey.

13. Modern Philosophy.

Renaissance through Enlightenment. 16th-, 17th-, and 18th-centuries' crises of faith and authority, scientific revolutions, and conceptions of modern man are presented through philosophical issues of the nature of knowledge, reality, man. Readings selected from sources including Luther, Montaigne, Bacon, Descartes, Spinoza, Locke, Hume, Voltaire, Kant.
Fall semester. Raff.

14. Ancient Philosophy.

The development of Greek philosophy from its sixth-century B.C. beginnings to the thought of Plato and Aristotle, with some attention to its impact on Western culture and its relation to subsequent (and contemporary) developments in philosophy. Emphasis is on understanding and critically evaluating the teachings of Plato and Aristotle on fundamental issues of metaphysics, epistemology, psychology, and ethics.
Spring semester. Desjardins.

16. Philosophy of Religion.

See Religion 14.

† Absent on leave, spring semester 1981.
*** Spring semester, 1981.

§ Bryn Mawr-Haverford-Swarthmore faculty exchange program.

17. Aesthetics.
An examination of definitions of art, the nature of aesthetic experiences, and the relation between creation and appreciation. Readings will include contemporary and classical texts.
Spring semester. Krausz.

18. Philosophy of the Social Sciences.
The course will be concerned with the philosophical problems which arise in the attempt to study and understand man. Typical issues will be the relation of facts to values, empirical evidence to theory, and ideas to other cultural forces. An attempt will be made to show how patterns of response to these issues reflect conceptions of the nature of man, and in general bring out the substantive implications of methodology.
Fall semester. Schuldenfrei.

19. Medieval Philosophy.
See Religion 36.

21. Social and Political Philosophy.
This course will be primarily concerned with issues in the philosophical foundations of modern democracy. The nature and justification of democracy, as well as tolerance, liberty, and community will be considered. The "exceptional" character of American democracy may also be discussed. Classical sources may be used for background, but the bulk of the reading will be of 19th- and 20th-century sources, such as J.S. Mill, de Tocqueville, Schumpeter, Dahl, and MacPherson.
Spring semester. Schuldenfrei.

22. American Philosophy.
This course will focus on pragmatism's contribution to American thought. Peirce, James and Dewey will be given the most attention, but the implications of pragmatism for major work on social, political, and aesthetic questions may be traced in such thinkers as O.W. Holmes, Jane Addams, G.H. Mead, Randolph Bourne, and Thorstein Veblen. Interaction of pragmatism and positivism will be considered.
Not offered 1980-81. Schuldenfrei.

23. Contemporary Philosophy.
A single philosophical issue selected to illustrate 20th-century philosophical techniques and theories; such as: the nature of emotion, value, human action, personal identity, truth, God, or imagination. Readings include current contributions and 20th-century classics by Moore, Russell, or Wittgenstein.
Not offered 1980-81. Raff.

24. Theory of Knowledge.
Empiricist, idealist, and realist traditions in epistemology surveyed as treatments of problems of scepticism, dogmatism, authority, truth, self-knowledge, perception, memory, objectivity. Readings from both current and traditional theorists.
Spring semester. Raff.

26. Philosophy of Language.
Philosophical techniques are applied to problems which arise about linguistic phenomena such as meaning, referring, naming. Readings in the works of Frege, Wittgenstein, Chomsky, etc. No prerequisite, but Logic or Linguistics are recommended complementary courses.
Not offerd 1980-81. Desjardins.

27. Metaphysics.
An exploration of selected topics arising out of the question of What there is: rationalist and empiricist views on the justification of metaphysical assertions; concrete and/or abstract entities; the issue of realism, both common sense and scientific: the status of mind and concept of person; the role and/or possibility of a transcendent reality. Against a historical background, contemporary authors like Bertrand Russell. A.J. Ayer, Gilbert Ryle, P.S. Strawson, and Wilfrid Sellars will be read.
Not offered 1980-81. Desjardins.

28. Marxist Philosophy.
Not offered 1980-81.

29. Nineteenth-Century Philosophy.
This course will be devoted to the careful analysis of some of the main currents of 19th-century philosophy and their interconnections, e.g., Idealism, Romanticism, Marxism, and Nihilism. Authors to be studied include Fichte, Schopenhauer, Hegel, Feuerbach, Marx, and Nietzsche.
Fall semester. Lachterman.

37. History of Science.
A survey of the development of physics and astronomy in the sixteenth and seventeenth centuries, emphasizing the nature of the scientific revolution, the revolt against Aris-

totle, the role of mathematics within science, the role of experiment, and the development of concepts of mass, force, universal gravitation, and the heliocentric universe. The philosophical and sociological origins of the scientific revolution will also be studied. Readings are drawn mainly from the writings of Copernicus, Kepler, Galileo, Descartes, and Newton.
Not offered 1980-81. Lacey.

38. Philosophy of Science.
The course will focus on issues connected with the nature and verification of scientific theories. Special treatment will be given to the nature of scientific change, growth and development, giving an historical emphasis to the course.
Spring semester. Lacey.

39. Phenomenology and Existentialism.
An introduction to several of the key issues in European phenomenology and existentialism, including the nature of human selfhood, the origin of values, the structure of mental activity, the interplay between human existence and its 'worlds', and the search for the foundations of rationality. The careful reading and discussion of selected primary texts by Kierkegaard, Nietzsche, Brentano, Husserl, Jaspers, Scheler, and Heidegger.
Not offered 1980-81. Lachterman.

42. Philosphical Classics.
Not offered 1980-81.

87. Colloquium: Advanced Logic and Foundations of Mathematics.
A selection of topics from the following: metatheorems of first order logic, the incompleteness of first order axiomatic systems of arithmetic, recursive function theory, modal logics, axiomatic theories of space and time, logical form and the structure of natural languages, philosophical foundations of arithmetic, foundations of geometry emphasizing problems of the nature of metrics. May be taken for one or two credits. Approval of instructor required.
Spring semester. Lacey.

89. Colloquium: Philosophy of Psychology.
The study will center upon behaviorism, its various kinds, its critics, and alternatives to it, in particular cognitive theories. There will be selected topics from the methodological and philosophical foundations of behaviorism, types of theoretical concepts used in psychology, the explanatory function of various theoretical concepts (e.g., mentalistic and neurophysiological), the explanation of linguistic behavior, the compatibility of determinism with psychology, the relation between structural and functional explanation, criteria of choice between conflicting theories, the relevance of values to theory choice.
Fall semester. Lacey.

93. Directed Reading.
Each semester. Staff.

96. Thesis.
Fall semester. Staff.

97. Senior Conference.
Fall semester. Desjardins.

SEMINARS

101. Moral Philosophy.
An examination of the principle theories about value and moral obligation, and of their justification: of the concepts of justice and human rights; of the implications for ethics of different theories about the freedom of the will. Works of representative theorists, both classical and contemporary, will be read.
Fall semester. Oberdiek.

102. Ancient Philosophy.
The development of Greek philosophy from its sixth-century B.C. beginnings to the thought of Plato and Aristotle. Emphasis on achieving a comprehensive and critical understanding of the philosophy of Aristotle, its historical role and objective significance. Attention is given to developing a proper methodology for critical historical study in

philosophy, and to the Presocratic, Socratic and Platonic background of Aristotle's thought.
Spring semester. Desjardins.

103. Modern Philosophy.
Metaphysical and epistemological problems about the nature of minds and bodies, the varieties of knowledge and freedom, are approached through the philosophical systems of Descartes, Spinoza, Leibniz, Locke, Berkeley, Hume, Kant.
Fall semester. Raff.

104. Contemporary Philosophy.
Some current philosophical problems are investigated in light of the work of Russell, Moore, Wittgenstein, and the most recent contributions.
Not offered 1980-81. Raff.

106. Aesthetics.
Not offered 1980-81.

107. Logic and Foundations of Mathematics.
See Philosophy 87.
Spring semester. Lacey

109. Metaphysics.
See Philosophy 27.
Not offered 1980-81. Desjardins.

110. Medieval Philosophy.
Close study of some major philosophical texts from the Christian, Islamic and Judaic Medieval traditions.
Spring semester. Lachterman.

111. Philosophy of Religion.
See Religion Department Preparation by course and attachment.

113. Theory of Knowledge.
Topics in epistemology explore the nature and limits of rationality. Readings primarily from current theorists.
Spring semester. Raff.

114. Nineteenth-Century Philosophy.
See Philosophy 29.
Fall semester. Lachterman.

115. Language and Thought.
See Linguistics 107.

117. Philosophy of the Social Sciences.
See Philosophy 18.
Fall semester. Schuldenfrei.

118. Philosophy of Psychology.
See Philosophy 89.
Not offered 1980-81. Lacey.

119. History and Philosophy of Science.
An examination of some of the central problems in the philosophy of science (e.g., the nature of scientific explanations, the interrelationship between theory and observation, criteria for the acceptance of a scientific theory, the nature of scientific concepts) will be made through an analysis of important episodes in the history of physics. Writings of Aristotle, Copernicus, Kepler, Galileo, Descarts, and Newton will be studied, as well as contemporary writings in the philosophy of science.
Spring semester. Lacey.

121. Social and Political Philosophy.
See Philosophy 21.
Spring semester. Schuldenfrei.

122. Philosophy of Law.
A study of concepts of law, including examination of the relationships between legal systems and other social and political institutions. Such issues as the proper relationship between law and morality, civil disobedience, legal enforcement of morality, and justification of punishment are considered. Readings in both historical and contemporary sources.
Not offered 1980-81. Oberdiek.

123. Phenomenology and Existentialism.
Not offered 1980-81. Lachterman.

180. Thesis.
A thesis may be submitted by majors in the department in place of one Honors paper, upon application by the student and at the discretion of the department.

Physical Education and Athletics

GOMER H. DAVIES, Professor
ELEANOR K. HESS, Professor
ERNEST J. PRUDENTE, Associate Professor
DAVID B. SMOYER, Associate Professor and Chairman
SUSAN P. DAVIS, Assistant Professor
DOUGLAS M. WEISS, Assistant Professor
MICHAEL L. MULLAN, Instructor
ELIZABETH D. WATTS, Instructor
PATRICIA CORNELL, Assistant
LEE W. JENKINS, Assistant***
THOMAS F. LAPINSKI, Assistant**
JOSEPH LEITNER, Assistant**
JOEL MARCUS, Assistant
JAMES W. NOYES, Assistant***
C.J. STEFANOWICZ, Assistant**
DENNIS C. WEST, Assistant

The aim of the Department is to contribute to the total education of all students through the medium of physical activity. We believe this contribution can best be achieved through encouraging participation in a broad program of individual and team sports, dance, aquatics, and physical conditioning. The program provides an opportunity for instruction and experience in a variety of these activities on all levels. It is our hope that participation in this program will foster an understanding of movement and the pleasure of exercise, and will enhance, by practice, qualities of good sportsmanship, leadership, and cooperation in team play. Students are also encouraged to develop skill and interest in a variety of activities which can be enjoyed after graduation.

The intercollegiate athletic program is comprehensive, including varsity teams in twenty different sports, eleven for men and nine for women. During many of these activities contests are arranged for junior varsity teams. Ample opportunities exist for large numbers of students to engage in intercollegiate competition, and those who qualify may be encouraged to participate in regional and national championship contests. Several club teams in various sports are also organized and a program of intramural activities is sponsored.

Students are encouraged to enjoy the instructional and recreational opportunities offered by the Department throughout their college careers. In the freshman and sophomore years all students not excused for medical reasons are required to complete a four quarter (two semester) program in physical education. All students must pass a survival swimming test or take up to one quarter of swimming instruction; classes for this purpose are offered in the fall quarter.

Courses offered by the Department are listed below. Credit toward completion of the Physical Education requirement will also be given for participation in intercollegiate athletics, as well as for the following two dance courses: Music — Dance 1 *(Introduction to Dance)* and Music — Dance 4 *(Intermediate Dance Technique)*. To receive credit for any part of the program students must participate in their chosen activity a minimum of three hours a week. Faculty regulations stipulate that students who have not fulfilled the Physical Education requirement will not be allowed to enter the junior year.

** Fall semester, 1980.

*** Spring semester, 1981.

Physical Education and Athletics

Fall Activities

Advanced Life Saving
Aquatics
Archery
Badminton
**** Cross Country
*ǂ Field Hockey
Folk & Square Dance
*** Football
* Soccer
* Tennis
Touch Football
** Volleyball
Weight Training

Winter Activities

Aquatics
** Badminton
* Basketball
Fencing
Folk & Square Dance
ǂ Gymnastics
* Squash
**** Swimming
Tennis
Volleyball
Water Safety Instructor
Weight Training
*** Wrestling

Spring Activities

Archery
Aquatics
Badminton
*** Baseball
Folk & Square Dance
*** Golf
**** Lacrosse
** Softball
Squash
* Tennis
**** Track and Field
Volleyball
Water Safety Instructor (continued)
Weight Training

ǂ Women
* Intercollegiate competition and course instruction.
** Intercollegiate competition for women, course instruction for men and women.
*** Intercollegiate competition for men.
**** Intercollegiate competition for men and women.

Physics

OLEXA-MYRON BILANIUK, Professor
MARK A. HEALD, Professor
LU HO-FU, Visiting Professor**
PAUL C. MANGELSDORF, JR., Professor and Chairman
JOHN R. BOCCIO, Associate Professor
ALBURT M. ROSENBERG, Associate Professor*
MICHAEL E. BACON, Assistant Professor
ALLEN S. BLAER, Assistant Professor†
RUSH D. HOLT, Instructor

The Physics Department offers two introductory courses. Physics 1, 2 is a more applied course, covering both classical and modern physics, designed primarily for those students planning to take only one year of physics. Physics 3, 4 is a more analytical course, aimed toward majors in physics and others planning to take further work in the department. Physics 3, 4 covers fewer topics, being the first half of a two-year introductory sequence consisting of 3, 4, 14, 15.

Entering freshmen with advanced placement credentials should see the department chairman if they are interested in taking advanced courses in the department. Typically, Physics 3H, 4H will be required prior to enrollment in Physics 14 or 15.

In addition to Physics 1, 2, the department offers a selection of courses (Physics 6, 7, 8, 9, 10, 21, 22) that are suitable for nonscience majors seeking to fulfill the science distribution requirement.

Throughout the work of the department, emphasis is placed on quantitative, analytical reasoning, as distinct from the mere acquisition of facts and skills. In all courses and seminars particular importance is attached to laboratory work, since physics is primarily an experimental science. External examination candidates taking physics seminars accompanied by experimental work must submit their laboratory notebooks to the visiting examiners for their inspection.

In addition to curricular work, students are encouraged to pursue research projects in consultation with members of the faculty. Good shop facilities, a wide range of electronic instrumentation, and computing facilities in both laboratories and the Computing Center are available in support of independent work. Research colloquia are held regularly under the auspices of the local chapter of the Society of Physics Students of the American Institute of Physics.

REQUIREMENTS AND RECOMMENDATIONS

Students who intend to major in physics normally take Physics 3, 4 and Chemistry 1, 2 (or 14) in the freshman year and Physics 14, 15 in the sophomore year. For freshmen prepared to enter Mathematics 11A or 11B the normal mathematics sequence for physics majors would be Mathematics 11A or 11B, 12 or 12H, 22 or 22H, and 30, during the first four semesters, followed by Mathematics 51, 52. Students entering the mathematics sequence with Mathematics 5A or 5B may wish to defer Mathematics 30 until after their sophomore year. Students taking Physics 1, 2 may also continue with Physics 14, 15 and advanced

** Fall semester, Virginia and Julien Cornell Distinguished Visiting Professor from Fudan University, Shanghai.

* Absent on leave, fall semester, 1980.
† Absent on leave, 1980-81.

work in the Department, although in most cases it will be necessary to include a half-credit attachment to Physics 15 (Physics 15A) to expand the students background in certain topics treated intensively in Physics 3, 4. Satisfactory work in an introductory course is prerequisite for all further work in the department. In view of graduate school requirements and of the extensive literature of physics in French, German and Russian, it is recommended that the student acquire a reading knowledge of at least one of these languages.

External Examination students majoring in physics normally take Physics 101, 107, 108 and Mathematics 51, 52, or equivalent. Physics 115, Chemistry 101, and one or two mathematics seminars are encouraged but not required. Other seminars and courses in the program may be chosen to meet the interests of the student. Students preparing for graduate work in physics often present four papers in physics and two in mathematics; one or two papers in chemistry, astronomy, engineering, economics, or another minor may be substituted. An External Examination major with three papers in physics and greater diversity in the minors and supporting courses constitutes an effective educational program for careers in law, medicine, and other professions inasmuch as the aim throughout is to achieve an understanding of fundamental ideas and concepts, as distinct from the mastery of information, skills, and techniques in a limited segment of science. Students minoring in physics may prepare for examinations by taking Physics 14, 15, with permission of the department.

A course major in physics is also available, normally including Physics 101, 107, 108 and Mathematics 51, 52. Course majors take departmental comprehensive examinations at the end of their senior year.

1, 2. Introductory Physics.

An introduction to selected concepts and applications of classical and modern physics. Vectors, Newtonian mechanics, special relativity, mechanical advantaage, fluid mechanics, thermodynamics, electricity and magnetism, optics and optical instruments, waves, sound and nuclear physics. Laboratory and homework exercises include use of the computer. Three lectures, a conference section, and a laboratory period weekly.
Prerequisite: Mathematics 4 completed, or Mathematics 5 concurrently or comparable preparations in mathematics.
Bacon, staff.

3, 4. General Physics: Mechanics, Electricity and Magnetism.

A presentation of a unified view of physics through analysis of basic principles, their implications and their limitations. Special emphasis will be placed on analytical understanding of physical phenomena through the use of calculus and simple differential equation. Topics include mechanics in Cartesian coordinate systems, conservation laws, oscillatory motion, systems of particles, rigid body rotation about a fixed axis, special relativity, electricity and magnetism, Maxwell's equations, direct- and alternating-current circuits, optics, and wave phenomena. Laboratory and homework exercises include extensive use of interactive computing and computer graphics. Students with advanced placement credentials may be admitted to a half-credit tutorial course with weekly laboratory, designated 3H, 4H, in place of the regular course. Three lectures, a conference section, and a laboratory period weekly.
Prerequisite: Mathematics 5, 11 taken concurrently, or comparable preparation in mathematics.
Boccio, staff.

6. Principles of the Earth Sciences.

An analysis of the forces shaping our physical environment, drawing on the fields of geology, geophysics, meteorology and oceanography. Special emphasis on plate tectonics and geomorphology. Readings and discussion based on current literature. The underlying physical and chemical principles are stressed. Laboratory demonstrations and one or more field trips. No special scientific background required.
Spring semester. Not offered in 1980-81.
Mangelsdorf.

7. Revolutions in Physics.

The problem of celestial motion and the Copernican revolution. The problem of terrestrial motion and Galileo. The Newtonian synthesis. Einstein's theory of relativity. Consideration of the nature of scientific

revolutions. Some use of computer graphics will be taught. Includes weekly laboratory. Intended for nonscience majors.
Fall semester. Not offered in 1980-81. Rosenberg.

8. The Physics of Living Machines.

The camera and the eye, and semiconductor devices and bioelectricity, sound detection and orientation, signal to noise discrimination, as illustrations of the importance of physical theory and instruments in understanding certain aspects of the living machine. Includes weekly laboratory. Intended for nonscience majors; not appropriate for pre-medical students.
Fall semester. Not offered in 1980-81. Rosenberg.

9. Order and Symmetry in Natural Systems.

Analysis of the forms seen in nature and the principles involved in order and symmetry. A study of pattern as it arises from (1) statistical regularities governed by the laws of chance, time's arrow, (2) fluid appearances of streams and gas flows, and (3) geometrical packing or mathematical ordering, with examples selected from molecular systems, crystals, atoms, nuclei, and elementary particles. Symmetries in living organisms and in man-made designs will also be considered. The IBM 1130 computer and graphic display will be used in producing various patterns. Includes weekly laboratory. Intended for nonscience majors.
Spring semester. May be offered 1980-81. Rosenberg.

10. Analysis of the Perturbed Environment.

Problems associated with numbers and flow in the movement of people. Energy resources and distribution. Selected problems of pollution, including radioactive contamination. The computer will be used to simulate different ecological situations. The value and implication of these models will be sought. Where needed, basic physical concepts, computer techniques, and analytical methods will be taught. Lectures plus projects. Intended for nonscience majors.
Spring semester. May not be offered 1980-81. Rosenberg.

14. General Physics: Quantum Physics.

This is an introductory course on the Quantum Theory with applications to nuclear, atomic, molecular, and solid-state systems. Emphasis is placed on the basic principles of quantum mechanics: the wave-particle duality, the operator formalism for obtaining probability distributions, measurement, the collapse of the wave function, and the time-dependent Schrodinger equation.
Prerequisites: Physics 2, 4; Mathematics 12 or 22 taken concurrently.
Fall semester. Bilaniuk

15. General Physics: Statistical Physics and Thermodynamics.

Thermal and statistical physics with applications and examples taken from solid state physics. Three lectures, conference section, and laboratory weekly.
Prerequisite: Phys. 14, or permission of instructor.
Spring semester. Staff.

15A. Attachment of Physics 15.

A half-credit course for students from Physics 1, 2 who wish to qualify for advanced work in the department.
Spring semester. Staff.

21. Principles of Aeronautics.

Principles of flight, elements of aircraft structure and performance, flight instruments, navigation aids and methods, flight meteorology, airspace utilization. No prerequisites, open to all students. Two lecture hours and an afternoon ground lab weekly.
Spring semester. Bilaniuk.

22. Energy for Mankind.

The role of energy in the modern world. Renewable and nonrenewable energy resources, their present and potential use and abuse. The physical concept of work and energy. Fossil, hydroelectric, geothermal, tidal, wind, ocean, bio-mass, direct-solar, satellite-solar, nuclear fission, nuclear fusion, and other energy sources; their respective advantages and disadvantages. Lectures and afternoon session (lab or field trip). Acceptable for science

distribution requirement. No prerequisites, but enrollment limited because of field trips. *Spring semester.* Bilaniuk.

25. Mathematical Methods in the Physical Sciences.

Ordinary and partial differential equations. Calculus of variations and the principle of least action. Differential geometry, tensor analysis, and an introduction to General Relativity and Cosmology. Probability theory and statistical models. Linear operators in Hilbert Space and the mathematical foundations of the quantum theory. Group theory and its application to quantum mechanics.
Prerequisite: Math 22 and Physics 14, or permission of the instructor.
Not offered in 1980-81. Blaer.

31. Biophysics.

Damage due to ionizing radiation. Biomembranes. Electrical potentials of nerve brain, and heart muscle. Mechanisms of vision and hearing. Energy yielding reactions. Thermodynamics and life processes. Enzyme kinetics. Utrasonics. Force and shape. Automata. Optical data analysis. Applications of physical instrumentation. The course is intended for biological and physical science, mathematics, and engineering students.
Spring semester. May not be offered 1980-81. Rosenberg.

63. Procedures in Experimental Physics.

Laboratory work directed toward the acquisition of knowledge and skills which will be useful in future research. Techniques, materials, and the design of experimental apparatus. Shop practice, electronic circuit construction, vacuum systems. Offered as a half-credit attachment to Physics 107 or 108; may be elected by other students with permission of the instructor.
Spring semester. Bacon.

93. Directed Reading or Project.

This course is to provide an opportunity for individual students to do special work, with either theoretical or experimental emphasis, in fields not covered by the regular courses and seminars. The student will present oral and written reports to the instructor.

94. Experimental or Theoretical Research.

Initiative for a research project may come from the student, or the work may involve collaboration with on-going faculty research. The student will present a written and an oral report to the Department.

97. Senior Conference.

Preparation of papers and oral presentations on selected topics of an integrative nature. One-half course credit.
Spring semester.

SEMINARS

101. Classical Physics.

Formulations of Newtown, Lagrange, Hamilton, and Maxwell, with applications including rigid-body motion, waves, normal-mode analysis, boundary-value problems, and electric and magnetic materials. Laboratory program including electrical measurements, elementary electronics, and instrumentation.
Prerequisites: Phys. 3, 4 (or Phys. 1, 2, 15A); Math 30.
Fall semester. Mangelsdorf, Holt, Lu.

107. Quantum Physics.

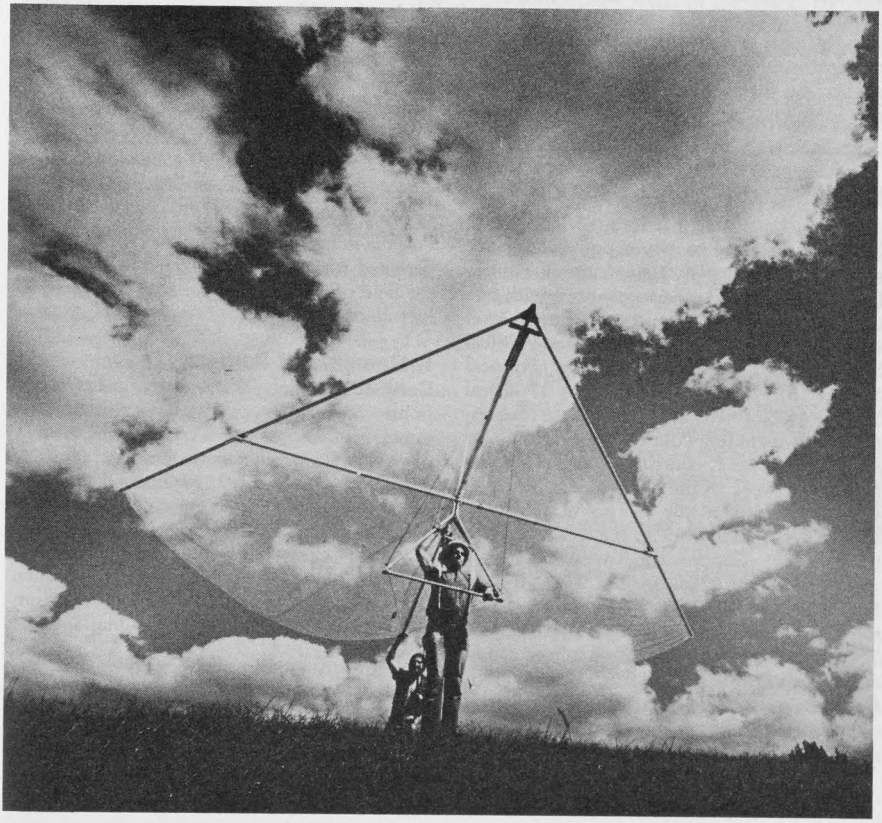
A more formal continuation of Physics 14 with applications in atomic, nuclear, solid state, and particle physics. Relativistic dynamics. Laboratory program includes substantial set-piece experiments and projects.
Prerequisites: Phys. 15 and 101; Math 51, with Math 52 concurrently.
Spring semester. Boccio.

108. Electrodynamics.
Applications of Maxwell's equations. Waveguides, antennas, radiation. Fraunhofer and Fresnel diffraction theory. Four-vector formulation of the special theory of relativity. Microscopic theory of the electrical and magnetic properties of materials. Plasma physics. Accompanied by laboratory exercises and experimental projects.
Prerequisites: Physics 101; Mathematics 51, 52.
Fall semester. Heald, Holt.

115. Senior Seminar.
An intensive investigation of one or more advanced topics such as:

Classical and Quantum Field Theory
Fundamental Particles
General Relativity — (1981 - Boccio)
Group Theory
Nuclear Structure
Physical Oceanography
Plasma Physics
Quantum Mechanics
Quantum Optics
Solid State Physics
Statistical Physics

Topics will be planned in advance each year in consultation with the students intending to enroll in the seminar. Depending on interest and appropriateness to External Examination Programs, certain topics may be offered as intensive half-semester seminars.
Spring semester.



Political Science

CHARLES E. GILBERT, Professor*
RAYMOND F. HOPKINS, Professor
JAMES R. KURTH, Professor
DAVID G. SMITH, Professor and Chairman
KENNETH G. LIEBERTHAL, Associate Professor†
RICHARD L. RUBIN, Associate Professor of Public Policy and Political Science
KENNETH E. SHARPE, Associate Professor†
CHARLES R. BEITZ, Assistant Professor
THOMAS BOSSERT, Assistant Professor
GAIL RUSSELL, Assistant Professor

Courses and seminars of offered by the Political Science Department deal with the place of politics in society and contribute to an understanding of the purposes, organization, and operation of political institutions, domestic and international. For the beginning student, the Department offers courses dealing generally with the basic concepts of political science and the processes of politics as illustrated by case studies, by theoretical analysis, and by more extended study of the elements of politics in various institutional settings. In appropriate places throughout the curriculum attention is focused on problems of change (evolutionary and revolutionary), freedom and authority, war and peace — and on the development of political institutions that are responsive to the needs of our day. Courses are provided that give special attention to political theory, comparative political systems, political development, politics and government in the United States, and international relations.

REQUIREMENTS AND RECOMMENDATIONS

Students planning to study political science are advised to start with Elements of Politics (Political Science 1), and to continue with one or more of the other introductory level courses, Policy-Making in America (Political Science 2), Comparative Politics (Political Science 3), International Politics (Political Science 4). Normally any two of these courses, preferably including Political Science 1 and/or Political Science 2, constitute the prerequisite for further work in the Department. Students who intend to major in political science should begin their work in the freshman year if possible. Supporting courses strongly recommended for all majors are: Applied Statistics I (Mathematics 1); and Introduction to Economics (Economics 1-2). Political Theory, either in seminar for Honors candidates, or in Course (Political Science 54 or 55) for Course students, is required of all majors.

Program in International Relations: This program, designed for students interested in a career in the field of international relations, is described in full on p. 120.

1. Elements of Politics.

Designed to probe some major questions of politics, this course asks: Who governs in the interests of whom? How? What are the sources of political stability and change? How is political power created, maintained, or challenged? Answering these questions will involve a study of the basic institutions, concepts, and moving forces of politics and exploring problems such as justice, freedom, equality, and obligation. Materials will be drawn from the United States, Germany, China, and the Soviet Union.
Fall semester. Staff.

* Absent on leave, fall semester 1980.

† Absent on leave, 1980-81.

2. Policy-Making in America.

Consideration of basic elements of American national politics, and of ways of defining and explaining the functions and results of American politics. Major attention will be devoted to electoral organizations, voting behavior and opinion formation, legislation and presidential leadership, administration and policy choices.
Each semester. Russell.

3. Comparative Politics.

An introduction to theories of comparative politics and to the data used in comparing political systems. Major attention will be given to the political systems of Western Europe, particularly Britain, France, West Germany, Italy, and Spain. The course will focus on political culture; political crises; political parties, including Communist, anarchist and fascist movements; and contemporary political institutions and policy-making.
Spring semester. Russell.

4. International Politics.

An introduction to the analysis of the contemporary international system and its evolution since 1945. The course will examine the foreign policies of major powers, wars and interventions, international economic conflicts, and various approaches to world order.
Spring semester. Staff.

11. Problems in Community Government.

The social, economic, and legal setting of local government. Politics and administration at state and local levels. Problems of federalism and metropolitan areas. The course may include special research projects, such as field work in nearby communities.
Spring semester. Gilbert or Russell.

13. International Organizations in World Politics.

This course surveys briefly the activities of international organizations related to military security and peacekeeping, but will focus primarily on one or more of the new issues facing international organizations, such as energy, food, economic or environmental concerns.
Alternate years, spring semester. Not offered 1980-81.

14. American Foreign Policy.

An examination of the making of American foreign policy and of the major problems faced by the United States in the modern world. The course will focus on the influence of political, bureaucratic, and economic forces and on the problems of war, intervention, and economic conflict.
Alternate years, fall semester. Kurth.

18. Political Development.

An examination of the conditions of change and development. The processes which promote change and affect the stability and capacity of political systems will be considered in the context of widely diverse states including industrialized and third world states.
Spring semester. Bossert or Hopkins.

19. Comparative Communist Politics.

A comparative study of the various communist countries, with special attention to the Soviet Union and the Chinese People's Republic. Analysis of differences in goal structures, modes of rule, and social development as a function of the interaction between legacies of the paths to power, domestic political conflict, and economic imperatives.
Spring semester. Not offered 1980-81. Lieberthal.

20. Politics of China.

An analysis of critical elements in Chinese politics: the historical legacy, ideology, policy-making, policy implementation, economic programs, and foreign policy.
Spring semester. Not offered in 1980-81. Lieberthal.

21. Politics of Black Africa.

A survey of political forces in contemporary Africa. Selected countries will be studied to illuminate important aspects of political change including traditional attitudes, leadership, ethnic rivalry, socialism, neocolonialism, military intervention, national integration, and international involvements.
Spring semester. Hopkins.

22. Latin American Politics.

This introduction to Latin American politics will explore such topics as the colonial legacy of Latin America; the difficulties of creating viable political institutions; contemporary sources of instability, revolution, and military intervention; the different meaning of politics

for various groups (Indians, peasants, workers, middle-class groups, industrialists, landowners, etc.); and the economic and political difficulties raised by U.S.-Latin American relations. These topics will be approached through a comparative study of such countries as Brazil, Chile, Cuba, Mexico, and Argentina.
Fall semester. Bossert.

36. The Politics of Peasant Movements.

Focusing on the politics of peasant movements, this course will address such general political questions as: How is authority legitimized? How do men come to accept or reject the obligation to obey? What are the obstacles and resources involved in creating the power to challenge a particular form of control? The course will integrate theories of revolution and ideological change with anthropological materials to explore the quality of peasant life, the meaning of various forms of economic and political control, and the origins and results of peasant movements. Cases will be drawn from Mexico, China, Italy, the Dominican Republic, and the United States.
Spring semester. Not offered 1979-80. Sharpe.

51. Public Administration.

An analysis of policy-making and administration in modern governments with illustrative material drawn chiefly from the national government of the United States. Central topics include: accountability and responsibility; organizational theory and practice; budgeting, planning, and "rational" policy making; public relations; regulation; administrative law; intergovernmental relations.
Fall semester. Not offered in 1980-81. Gilbert.

52. American Constitutional Law.

The role of the Supreme Court in the American political system, viewed both historically and through analysis of leading cases. Areas of constitutional law and development emphasized are: the nature and exercise of judicial review; federalism and the scope of national power; due process, equal protection, the First Amendment, and other civil liberties. Open to sophomores and upperclassmen.
Fall semester. Smith.

53. American Party Politics.

An historical and functional analysis of American political parties. The study of interest groups, public opinion and voting behavior, electoral systems and representation, the legislative process.
Fall semester. Rubin.

53B. The Mass Media and American Politics.

An historical and contemporary consideration of the effects of mass media on American political institutions and political behavior. Special emphasis on the transformation from print to electronic media and its impact upon political parties and governmental institutions.
Spring semester. Rubin.

53C. Presidential Politics.

The central focus of the course is on electoral connections between public opinion, political organizations and institutions, and the exercise of presidential power.
Spring semester. Rubin.

54. Political Theory: Plato to Machiavelli.

The development of political thought in the ancient and medieval periods, and the emergence of a distinctively modern political outlook. Topics considered include: the origins, functions, and purposes of the city-state; the role of law and knowledge in government; the relation of ethics and politics; justice, and its relation to Greek and Christian thought. Recommended for students who plan to take the Political Theory seminar.
Fall semester. Not offered in 1980-81. Sharpe.

55. Modern Political Theory.

A study and critique of liberalism through close reading and analysis of the writings of such theorists as Hobbes, Locke, Rousseau, Bentham, J.S. Mill, Marx, and Rawls. The course will consider problems regarding liberty, political obligation, the common good, human nature, and distributive justice.
Spring semester. Beitz.

56. Contemporary Political Theory.

An examination of political theory from Marx and J.S. Mill to present. Among other topics a special concern will be the ability of contemporary liberal political and economic thought to respond to its critics' attacks on its psychological and epistemological foundations, and on its adequacy as a guide to political understanding and action. An effort will be

made to understand the various and often conflicting currents within liberal theory, as well as to identify certain common problems. Marxist, existentialist, anarchist and structuralist critics may be considered.
Prerequisite: Political Science 55 or permission of the instructor.
Spring semester. Not offered 1980-81. Sharpe or Beitz.

57. Jurisprudence.

As exploration of the concept of law as it has been understood by lawyers, judges, philosophers, and social scientists. Issues to be considered include the nature and validity of law, the relation of law to morality, and the place of political theory in the judicial decision. Some current moral issues in law may be discussed. Readings will be chosen from classical and contemporary works in the philosophy and social science of law as well as from representative cases.
Spring semester. Not offered 1980-81. Beitz or Smith.

58. Health Policy.

(Also listed as Economics 58.) Analysis of governmental policy toward health care and public health, its impact upon institutions and resource allocation, and major alternatives for action. Central topics are the organization of health care delivery (roles and views of physicians, nurses, administrators, patients and insurers); the interplay of federal, state, and local governments, quasi-public authorities, and interest groups; technical and political aspects of health insurance alternatives; health manpower (medical and nursing schools, paraprofessionals); biomedical research programs. Students wishing to take this course should consult in advance with the instructors. Prior work in at least two of the following will be helpful: Economics 1-2, 4, 26; Political Science 2, 51; Mathematics 1; Engineering 4, 32.
Spring semester. Hollister and Smith.

60. Special Topics in Political Science.

Open to senior Course majors in Political Science. Devoted to the preparation fo three qualifying papers in the senior year.
Spring semester. Members of the Department.

61. Topics in Political Theory.

An analysis of topics or problems in the fields of political philosophy or the history of political thought, chosen by the instructor. Some of the possibilities are: varieties of systematic theory; such problems as privacy or individual rights; political obligation; or concentrated study of a particular period such as political thought of nineteenth-century Britain.
Staff.

62. Economics, Justice and Law.

(Also listed as Economics 62.) The purpose of this course is to explore the premises behind the use of utilitarian constructs in the analysis of public policy issues. In particular, the appropriateness of the growing utilization of economic methodology will be examined through an intensive study of issues in law and distributive justice. The necessary background in political theory and welfare economics will be developed as needed.
Prerequisite: Permission of the instructor.
Fall semester. Beitz and Kuperberg.

63. Advanced International Politics.

An examination of the major international wars and the major international economic crises from 1870 to the present. The emphasis will be on the relationships between domestic politics and foreign policies. Topics will include World War I, the Great Depression, World War II, and contemporary economic conflicts.
Prerequisite: Political Science 4 or the equivalent.
Spring semester. Not offered 1980-81. Kurth.

64. Political Socialization and Schools.

(Also listed as Education 64. See course description under Program in Education.)
Not offered 1980-81. Travers.

65. Political Psychology.

(Also listed as Psychology 65.) A psychological examination of individuals' participation in and impact upon politics and the effect of various political systems on individuals. Topics include opinion in the American electoral process, ideology formation and models of post-revolutionary man. Projects

will involve gathering original data and analyzing archival data.
Fall semester. Peabody.

66. Energy Policy.

(Also listed as Engr. 66.) Presentation and exploration of political, economic, and technological issues affecting development of energy policy, and investigation of the influence of energy policy on policymaking in other areas. Possible topics include: development of the U.S. Energy bureaucracy; international political/economic decision-making and OPEC; development and impact of energy price decontrol; economic and political aspects of U.S. energy technology exports; economic and environmental perspectives of energy resource development (renewable and otherwise). Suggested preparation includes Economics 1-2 and Political Science 2 or 51. Enrollment by permission of instructors.
Fall semester. Orthlieb and Rubin.

67. Social Insurance and Welfare Policy.

(Also listed as Economics 67.) The principal American policies and programs dealing primarily with relief of poverty and economic insecurity, and the prospects and options for reform in this field. Topics include: Social Security, national health inurance, unemployment compensation and welfare reform. The various public objectives and methods of income support and related social services, as well as certain contextual or alternative programs and regulatory policies. Conceptions of "welfare"; economic, social, political, and administrative or professional considerations in policy; historical and comparative perspectives. Intended as a single- or double-credit seminar for students in the Public Policy Concentration and open for single credit to others who have taken appropriate Public Policy prerequisites, on which consult the Catalogue and, as to exceptions, one of the instructors.
Spring semester. Gilbert and Seidman.

68. Environmental Policy.

(Cross-listed as Engineering 68.) A seminar which explores public policy issues related to the degradation and protection of the natural environment. Interactions among governmental agencies, private industries, and public interest groups are explored and related to the physical processes that are affected and the pollution control technologies that are available. Enrollment by permission of instructors; suggested preparation includes Economics 1 and 2, Political Science 2, a mathematics course, and a science course.
Not offered 1980-81.

69. Defense Policy.

Analysis of the history and stucture of defense policy since World War II, with particular emphasis on the choice of weapons systems and military strategies. Political, economic, bureaucratic, and other explanations of past and present policies will be explored.
Fall semester. Kurth.

70. The Political Economy of Communist Systems.

(Also listed as Economics 70.) A single-credit colloquium analyzing the interaction between economics and politics in Communist countries. Case study material will be drawn from several East European countries, the USSR, and China.
Prerequisite: at least one introductory course in either economics or politics.
Fall semester. Not offered 1980-81.

91. Macroeconomic Policy and American Political Institutions.

(Also listed as Economics 91.) The course treats the economic and political aspects of inflation, unemployment, and tax policy in the U.S. Particular emphasis is given to interaction between governmental institutions, markets and public policy decisions. Specific topics include: (A) Unemployment Policy: the legacy of the Great Depression and the Keynesian Revolution; structural unemployment policy, (discrimination by race or sex; unskilled workers); unemployment compensation, welfare, and minimum wage laws; (B) Inflation Policy: the stagflation dilemma; monetary and fiscal discipline; "incomes" policies (voluntary, mandatory controls, tax-incentives — TIP); (C) Tax Policy: the trade-off between equality and efficiency; tax reform to encourage productivity and capital formation.

Prerequisite: Political Science 1 or 2 and Economics 1 and 2.
Spring semester. Rubin and Seidman.

93. Directed Readings in Political Science.

Available on an individual or group basis, subject to the approval of the chairman and the instructor.

96. Thesis.

With the permission of the chairman and a supervising instructor, any major in Course may substitute a thesis for one course, normally during either semester of the senior year.

SEMINARS

The following seminars prepare for examination for a degree with Honors:

101. Political Theory.

An analytical and critical examination of the philosophical foundations of liberalism and socialism, drawing on the writings of theorists from Hobbes to Marx and including works of some contemporary political philosophers. The subjects considered include such problems as the nature of legitimate authority, the basis of political obligation, liberty, and democracy. Particular attention will be given to the question of distributive justice and the relevance of Marx's political and philosophical writings to liberal theory.
Each semester. Beitz.

102. Politics and Legislation.

The study of political parties, interest groups, public opinion and voting behavior, electoral systems and representation, the legislative process. Emphasis is on American politics, with some comparative material; and, ultimately, on politics from the standpoint of theories of political democracy.
Spring semester. Gilbert.

103. Problems in Government and Administration.

Problems of administrative organization, policy-making and responsibility, with primary reference to the United States and to selected fields of policy.
Fall semester. Smith.

104. International Politics.

An inquiry into problems in international politics. Topics will include (1) wars and interventions, (2) international economic conflicts and crises, (3) competing theories of foreign policies, (4) various approaches to world order.
Prerequisite: Political Science 4 or the equivalent.
Fall semester. Hopkins.

105. American Foreign Policy.

A study of key problems faced by the United States in the modern world together with a critical investigation of the making and implementing of American foreign policy. A variety of explanations of American foreign policy will be discussed and evaluated, and the political, economic, and social influences upon it will be considered. Key assumptions of United States policy-makers will be subjected to scrutiny, and alternate assumptions and policies will be analyzed.
Spring semester. Kurth.

106. Public Law and Jurisprudence.

A study of the sources and nature of law; historical, sociological, philosophic, "realistic," and behavioral approaches to jurisprudence; the nature of the judicial process and other problems of jurisprudence, illustrated by judicial decisions and other legal materials relating to selected areas of law.
Spring semester. Smith.

107. Comparative Communist Politics.

A comparative study of the various communist countries, with special attention to the Soviet Union and the Chinese People's Republic. Analysis of differences in goal structures, modes of rule, and social development as a function of the interaction between legacies of the paths to power, domestic political conflict, and economic imperatives.
Spring semester. Not offered 1980-81. Lieberthal.

108. Comparative Politics.

A comparative study of the political systems of Western Europe. The major countries examined will be Britain, France, Germany,

Italy and Spain, but attention will also be given to smaller states. Topics will include (1) competing theories of comparative politics, (2) the relationships between economic development, economic crises, and political conflict, (3) political parties, including communist, anarchist, and fascist movements, and (4) contemporary political institutions and policymaking.
Prerequisite: Political Science 3 or the equivalent.
Fall semester. Kurth or Russell.

108B. Comparative Politics: Latin America.

A comparative study of the politics of several Latin American countries: Chile, Brazil, Cuba, Mexico, Peru, Argentina, the Dominican Republic. The course will focus on important differences in major institutions, class structures and social values, and an examination of various theories explaining political stability and change. Problems will include: difficulties of creating stable democratic institutions; causes and results of revolutions, coups, and military interventions; different meanings of politics for various classes in socialist, corporatist, and (formerly) democratic regimes; and the utility of dependency theory in explaining U.S.-Latin American relations.
Spring semester. Not offered in 1980-81. Sharpe.

109. Political Development.

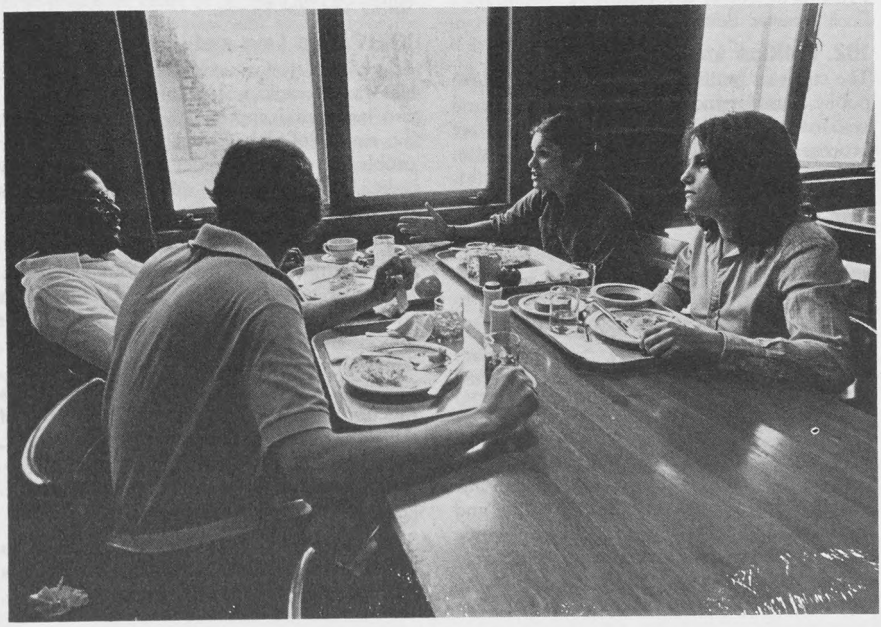
A comparative study of the politics of societies undergoing change and modernization. Various theories, approaches, and methods of explanation are examined and considered in the context of third world states in Asia, Africa, the Middle East and Latin America and industrialized states such as the United States and countries of Western Europe.
Spring semester. Hopkins.

110. Urban Society, Politics, and Policy.

The political and governmental organization of extended cities in contemporary America: social, economic, and constitutional foundations; issues of public policy.
Spring semester. Gilbert.

180. Thesis.

All members of the Department.



Psychology

NORMAN ADLER, Visiting Professor (part-time)**
KENNETH J. GERGEN, Professor†
DEAN PEABODY, Professor
ALLEN SCHNEIDER, Professor*
ALFRED BLOOM, Associate Professor§§
DEBORAH G. KEMLER, Associate Professor
JEANNE MARECEK, Associate Professor
BARRY SCHWARTZ, Associate Professor and Department Head
PHILIP KELLMAN, Instructor
LEIGHTON WHITAKER, Director of Swarthmore College Psychological Services
HANS WALLACH, Research Psychologist

The work of the Department of Psychology deals with the scientific study of human behavior and experience; processes of perception, learning, thinking, and motivation are considered in their relation to the development of the individual personality, and to the relations of the individual to other persons. For those students planning graduate and professional work in psychology and related fields, the courses and seminars of the Department are designed to provide a sound basis of understanding of psychological principles and a grasp of research method. Students learn the nature of psychological inquiry and the psychological approach to various problems encountered in the humanities, the social sciences, and the life sciences.

A special major is available in conjunction with Linguistics emphasizing fundamental issues in human cognitive organization. A full description of this program may be found under Linguistics.

REQUIREMENTS AND RECOMMENDATIONS

Psychology 3, Introduction to Psychology, is normally a prerequisite for further work in the Department.

A Course major consists of at least eight courses, normally including four of the core courses (with course numbers in the 30's): Physiological Psychology, Learning and Behavior Theory, Perception, Cognitive Psychology, Psychology of Language, Social Psychology, Personality, Abnormal Psychology, and Child Development. Those wishing to substitute more individualized programs should present their reasons in writing. Majors should take at least one course providing them with experience in research. In addition, majors in Course are encouraged to enroll in Psyschology 98 during the spring semester of their senior year. This course is intended to provide integration of different fields of psychology and to offer majors one way to meet the comprehensive requirement. Students intending to pursue graduate work in psychology will also find it useful to take Psychology 13, Statistics for Experimental Data, or Psychology 14, Statistics for Observational Data, or Psychology 15, Statistics.

3. Introduction to Psychology.

An introduction to the basic process underlying human and animal behavior, studied in experimental, social, and clinical contexts. Analysis centers on the extent to which

§§ Joint appointment with Linguistics.
† On leave, 1980-81.
* On leave, fall semester, 1980.
** Fall semester, 1980.

normal and abnormal behavior are determined by learning, motivation, neural, cognitive, and social processes.
Each semester. Staff.

13. Statistics for Experimental Data.
(See Mathematics 2.)
Spring semester. Iversen.

14. Statistics for Observational Data.
(See Mathematics 1.)
Spring semester. Iversen.

15. Statistics.
(See Mathematics 15.)
Fall semester. Iversen.

21. Educational Psyschology.
(See Education 21.)
Fall semester.

23. Adolescence.
(See Education 23.)
Spring semester.

24. Psychological Anthropology.
(See Sociology/Anthropology 24.)

25. Methods of Psychological Research.
Direct research experience is emphasized, and instruction proceeds by example. Discussion focusses on the relationships between given theories and the methods used in the supporting research. The comparative advantages and disadvantages of participatory observation and analysis, "objective" naturalistic observation, interviewing, content analysis, and experimentation are examined. Each student conducts an individual research project and participates in class projects.
Kemler.

30. Physiological Psychology.
A survey of the neural and biochemical bases of behavior with special emphasis on sensory processing, motivation, emotion, learning, and memory. Both experimental analyses and clinical implications are considered.
Fall semester. Adler.

31. Learning and Behavior Theory.
The experimental analysis of the major phenomena of learning and conditioning is considered mainly at the animal level, with particular attention to the theories of B.F. Skinner. Specific empirical and theoretical issues are considered in detail, and the major theories are evaluated. The laboratory is designed to acquaint students with the processes considered.
Fall semester. Schwartz.

32. Perception.
The major theories and some problems of visual and auditory perception are outlined and used to acquaint the student with experimental research. Primary emphasis is on adult visual perception, but other senses and some developmental issues are also treated.
Fall semester. Kellman.

33. Cognitive Psychology.
The course covers higher mental processes, including such topics as visual and auditory attention, pattern recognition, short- and long-term memory, concept formation, thinking, and problem solving. Models of human cognition are examined in the light of experimental data.
Fall semester. Kellman.

34. The Psychology of Language.
(See Linguistics 34).
Fall semester. Bloom.

35. Social Psychology.
An examination of theory and research relevant to the understanding of social interaction from a psychological viewpoint. Special emphasis is placed on social perception and its distortion, attitude development and change, conformity, the relationship of personality to social interaction and social motivation.
Spring semester. Gergen, Peabody.

36. Personality.
An examination of contrasting theories of the human personality. Theories of Freud, Jung, Fromm, Rogers and others will be discussed, and special attention will be given to current empirical work.
Fall semester. Not offered 1980-81.

38. Abnormal Psychology.
A survey of major forms of psychopathology in adults and children. Biogenetic, sociocultural, and psychological bases of abnormality are examined, along with their corresponding modes of treatment.
Spring semester. Marecek.

39. Child Development.

A selective survey of cognitive and social development from infancy to adolescence. Major theoretical perspectives on the nature of developmental change are examined, including those of Piaget and his critics. Topics include the growth of logic, language, and other cognitive skills, as well as moral development, sex typing, and personality theory in a developmental context.
Fall semester. Kemler.

44. Psychology of Women.

An examination of traditional and revisionist theories and research on sex roles and sex differences. The socialization of sex roles in adults and children will be studied, with particular emphasis on the penalties that adults incur for sex-role deviance. Other topics include men's and women's marital and family roles; gender roles and mental health; and institutional and psychological barriers to women's achievement.
Fall semester. Marecek.

45. Group Dynamics.

The course deals with the psychological aspects of behavior in groups. Issues such as intimacy, solidarity, group problem solving, leadership development, splinter-group formation, and phases of group development receive attention. Classroom sessions focus on the ongoing behavior within the group itself. Outside reading and papers are used to illuminate processes within the group and to raise significant theoretical problems. (By application only.)

55. Neuropsychology of Language.

The course investigates higher cortical function in humans. It focuses on breakdowns in cognition, languages, and memory which accompany particular types of neurological disorder, with primary emphasis on what these neurological breakdowns reveal about cognitive function in the normal, intact human. Previous work in linguistics and in cognitive psychology, and a working familiarity with the functions of the nervous system are helpful and may be essential. Students deficient in background may be asked to do some preparatory reading.
Spring semester.

56. Cognitive Patterns in Moral, Linguistic and Political Behavior.

An investigation into the role played by cognitive dimensions in influencing moral, linguistic, and political behavior, with emphasis on adolescence and beyond. An attempt is made to place the investigation within a framework provided by current trends in cognitive psychology, existential philosophy and linguistics and to draw on the implications of these dimensions with respect to the relationship of the individual to the nation-state and the international system. (Cross-listed as Linguistics 56.)
Spring semester. Bloom.

62. Schizophrenic Disorders.

A course in seminar format. Psychodynamic, cognitive, social, biographic and psychophysiologic approaches are used to understand this broad group of disorders, their commonalities, and variations, and their relatedness to other psychological states. Some attention is given to forms of intervention with emphasis on psychotherapy.
Prerequisites: Abnormal Psychology and interest in broad coverage of concepts of schizophrenic disorders and multi-disciplinary approaches to the subject matter.
Fall semester. Whitaker.

63. Special Topics in Cognitive Psychology.

Selected problems from the current literature on human information processing and cognitive psychology are considered in detail. Emphasis is placed on the relationship between theories of cognition and current experimental findings. Also, the development of cognitive skills receives some attention.
Kellman.

64. Modes of Psychotherapy.

A survey of the theories, techniques, and goals of various modes of psychotherapy, including psychodynamic approaches, behavior therapy, humanistic therapies, cognitive therapy, and family therapy. Other topics include research on the effects of psychotherapy, the ethics and politics of psychotherapy, and the community mental health movement.
Prerequisite: Psychology 38.
Spring semester. Marecek.

65. Political Psychology.

A psychological examination of individuals' participation in and impact upon politics and the effect of various political systems on individuals. Topics include public opinion in the American electoral process, ideology formation, and models of post-revolutionary man. Projects involve gathering original data and analyzing archival data. (Crosslisted as Political Science 65.)

Fall semester. Peabody and Hopkins.

66. Special Topics in Neurobehavioral Research.

A course in seminar format. A detailed analysis of the neural basis of behavior. Genetics, endocrinology, and neuro-chemistry are considered with emphasis on their relation to behavioral disorders such as schizophrenia, amnesia, and aphasia.

Not offered 1980-81. Schneider.

67. Special Topics in Child Development.

Conducted in a combined lecture and discussion-group format. Aspects of personality, social, and cognitive development are examined, with individual and group field projects an important part of the course.

Fall semester. Kemler.

68. Special Topics in Social Psychology.

Considers selected special topics in human relations.

69. Special Topics in Personality.

Considers selected topics in personality organization and dynamics.

88. Colloquium: Behaviorism and Developmentalism.

This course examines behaviorism, as exemplified by B.F. Skinner, in detail. It evaluates the epistemological assumptions of behaviorism, the empirical support for these assumptions, and the social and political implications of behaviorist analysis. Special attention is paid to the articulation of alternative epistemological assumptions as potential frameworks for empirical psychology.

Open to advanced students in philosophy and/or psychology.

89. Colloquium: Philosophy of Psychology.

(See Philosophy 118 for description.) Available for one or two credits.

Prerequisite: One course in psychology and one course in philosophy or permission of the instructor. (Crosslisted as Philosophy 89.)

Fall semester. Lacey.

90. Practicum in Psychology.

An opportunity for advanced psychology students to gain supervised experience working in off-campus research projects or clinical settings. Informal seminars meet to consider practical, theoretical, and ethical issues arising from participants' experiences. Course requirements and evaluations are tailored to individual projects. Advance arrangements for placements should be made in consultation with the instructor.

Spring semester. Marecek.

91. Research Practicum in Psychology.

Research on the neural and chemical bases of learning and memory. Current theories are discussed. Special topics include: interhemispheric transfer, memory consolidation, and recovery from retrograde amnesia. In seminar format.

Prerequisite: Psychology 30. By application.

Fall semester. Not offered 1980-81. Schneider.

92. Directed Research on Social Explanation.

Lectures and discussions first center on contemporary psychological and philosophical issues in self and social perception, emotional identification, and causal explanation. After exploring fundamental issues relating these areas, students engage in independent supervised research projects based on this work. The course furnishes a means of gaining first-hand research experience on issues of major concern in contemporary social and personality psychology.

Not offered 1980-81. Gergen.

94. Independent Research.

Students conduct independent research projects. They typically study problems with which they are already familiar from their

course work. Students must submit a written report of their work. Registration for Independent Research requires the sponsorship of a faculty member who agrees to supervise the work.
Each semester. Staff.

95. Tutorial.

Any student may, with the consent of a member of the department, work under a tutorial arrangement for a single semester. The student is thus allowed to select a topic of particular interest, and in consultation with a faculty member, prepare a reading list and work plan. Tutorial work may include field research outside Swarthmore.
Each semester. Staff.

96, 97. Senior Paper.

With the permission of the Department, students may do a comprehensive research paper in their senior year — in lieu of comprehensive exams. Such students are encouraged to take the course both semesters. The course includes: (a) carrying out a research project with the advice of a faculty sponsor and (b) taking part in a joint discussion group that will share the problems of each stage of their research. It is helpful for such students to develop a general plan by the end of the junior year. It is possible to take the course for a single semester. By application.
Both semesters.

98. History and Systems of Psychology.

Intended to provide integration of different fields of psychology and to offer majors one way to meet the comprehensive requirement. Historical treatment concentrates on the major systematic points of view. Special consideration is given to problems overlapping several areas of psychology.
Spring semester. Peabody.

SEMINARS

101. Perception.

Reading and discussion combines with independent experimental projects. Students are expected to know the basic facts about human perceptual mechanisms and their development by the time they have completed this seminar. Specific topics covered are: color vision, grouping and form, depth and distance, size, visual motion, visual and auditory localization, recognition, adaptation of perceptual functions. Laboratories are devoted to demonstrations and both group and individual projects with adults, infants, and children.
Kellman.

104. Individual in Society.

The relationship between man and his society. Basic processes including the understanding of other persons, theories of cognitive consistency, group influence and conformity. Applications to political attitudes, group prejudices. The relation of attitudes and personality. The relation of psychology to the social sciences.
Fall semester. Peabody.

105. Personality.

A scrutiny of attempts to build an objective basis for "understanding the person as a whole." Contrasting theoretical orientations, techniques of observation, and specific problems will be examined. Theoretical orientations: psychoanalysis, factor analysis, learning theory, phenomenology. Observation techniques: interviews, questionnaires, fantasy material. Problems: aggression, need achievement, prediction, psychotherapy, and psychological maturity.
Spring semester. Not offered 1980-81. Gergen.

107. Language and Thought.

See Linguistics 107.
Fall semester. Bloom.

109. Physiological Psychology.

An in depth analysis of the neural bases of motivation, emotion, learning, memory and language. Generalizations derived from neurobehavioral relations will be brought to bear on clinical issues.
Spring semester. Schneider.

118. Philosophy of Psychology.

The content of the seminar will be covered in a colloquium during the 1980-81 academic year. Refer to Psyc/Phil 89.
Not offered in 1980-81. Lacey.

131a and b. Learning and Behavior Theory.

See description of Psychology 31. Students are expected to attend lectures given in Psychology 31, and to participate in the laboratory. The second part of the seminar (131b) considers in depth special topics of interest discussed in the first part of the seminar. One credit each semester.

Both semesters. Schwartz.

133a and b. Cognitive Psychology.

An intensive study of selected problems in human information processing. Specific topics may include visual and auditory attention, pattern recognition, short- and long-term memory, concept formation, thinking and problem-solving. Students will conduct individual or group projects of empirical research. Psychology 133a meets with Psychology 33. The second part of the seminar (133b) considers in depth special topics of interest discussed in the first part of the seminar. One credit each semester.

Both semesters. Kellman.

138. Abnormal Psychology.

A comparison of theories of disordered behavior. Biological, psychodynamic, and sociocultural approaches are considered. Topics such as the "illness" model of mental disorders, ethical issues in psychotherapy, and definitions of mental health are also discussed.

Fall semester. Marecek.

139. Child Development.

A comparative study of the major theoretical approaches to child development. Psychoanalytic, cognitive development and learning orientations are stressed. Interplay among biological maturation, experience with the physical and social environment, and the socialization practices of parents and schools is examined. Substantive topics covered include sensory-motor and social development in infancy, language acquisition, cognitive change in the preschool and early elementary school years, moral development, and selected aspects of personality development.

Spring semester. Kemler.

180. Thesis.

May be presented as a substitute for one seminar provided some member of the Department is available to undertake the direction of the thesis.

Each semester. All members of the Department.

MASTER'S DEGREE

A limited number of students may be accepted for graduate study toward the Master's degree in general psychology (See p. 54). Students receiving the Bachelor's degree from Swarthmore are not encouraged to enter this program.

The program of work for the Master's degree requires the completion of four seminars (as listed above), or their equivalent. One of the seminars must be a research seminar leading to a thesis. The work of the seminars is judged by external examiners. The requirements for the Master's degree can normally be completed in one year.

Public Policy

RICHARD L. RUBIN, Coordinator

The concentration in Public Policy enables students to combine work in several departments toward critical understanding and some practical competence in issues of public policy including its development, formulation, implementation, and evaluation. The departments centrally concerned with the concentration are Economics, Engineering and Political Science; but work in other departments is decidedly pertinent to the concentration. Faculty members from other departments may be directly involved in the concentration, and course or seminar offerings from other departments may, in certain circumstances, meet requirements for the concentration. Some competence in formal or quantitative methods is required for students concentrating in Public Policy, but work in the concentration also and at least equally emphasizes historical, institutional, and normative analysis or understanding.

REQUIREMENTS AND RECOMMENDATIONS

The concentration in Public Policy is not a major. It may be taken together with a Course or External Examination (Honors) major in any field, and it can be combined most integrally with a major in one or more of the participating departments of Economics, Engineering or Political Science. At a minimum, the concentration consists of certain course requirements, totaling six credits and an internship. The program of each concentrator should be worked out in consultation with the Coordinator of the Public Policy Program and approved by the Coordinator, preferably at the same time as majors in the Course and Honors Programs are planned. Students who wish to concentrate in Public Policy are urged to complete the introductory, prerequisite courses in two or more of the participating departments by the end of their sophomore year.

Academic requirements for the concentration include three preparatory courses: Economics 20 (Economics Theory) or Economics 22 (Public Finance), Political Science 51 (Public Administration), and at least one course in quantitative analysis. This last requirement may be met by Mathematics 1 (Applied Statistics), Mathematics 15 (Mathematical Statistics), Economics 4 (Statistics for Economists), Engineering/Economics 56 (Operations Research), and Economics 108 (Econometrics).

Two courses, colloquia, or seminars specific to the Public Policy concentration and dealing with certain substantive sectors or institutional aspects of public policy are required, and at least one of these will be taken for double credit. Four or more offerings are available each academic year and, as a rule, are taught jointly by faculty members from two departments. These may be taken as single-credit or as double-credit units, and some may be taken as units in the external examination program. Enrollment will be limited, and students concentrating in Public Policy will take priority in admission to seminars or colloquia.

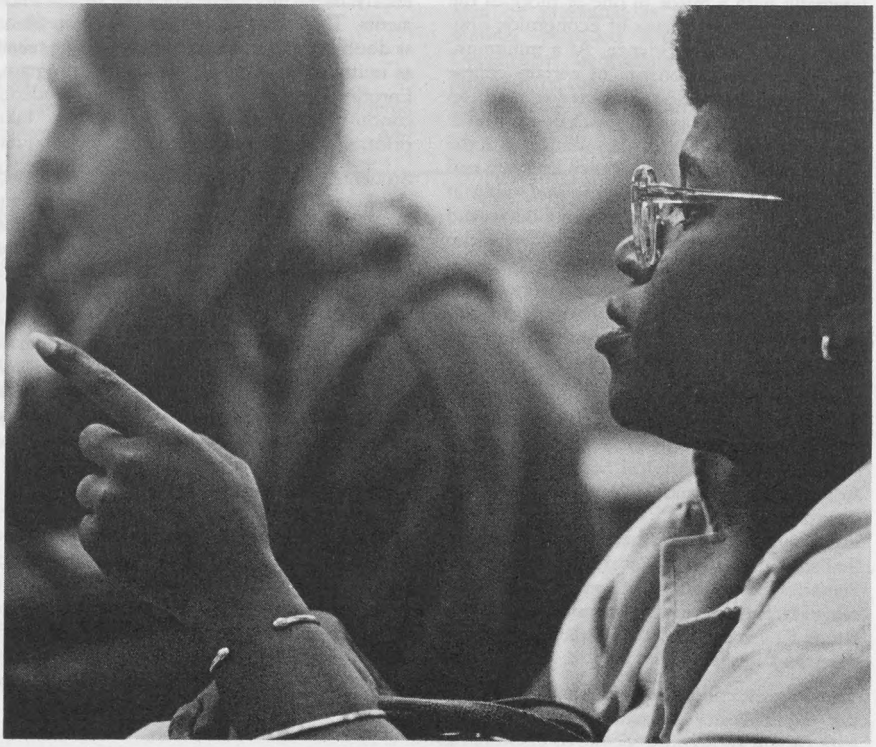
Students able to do pertinent work beyond these requirements are encouraged to do so. Highly desirable, though not required, is some course or seminar work dealing with questions of public law and political philosophy, such as Political Science 57 (Jurisprudence), and Political Science 62 (Economics, Justice and Law). These courses and other academic work, such as theses, directed reading, and regular offerings in various departments relevant to the particular program and interest of the student, should be included in the planning of the student's program even if they are not formally required for the concentration. In special circumstances, students with adequate and appropriate alternative preparation (as might be the case for some natural-science students) may request that such preparation be substituted for courses normally required in the concentration. Approval of such requests, as for approval of internships, will be the responsibility of the coordinator and the committee on public policy studies.

INTERNSHIP

Some direct experience or practical responsibility in the field, through work in a public, private, or voluntary agency, is required for graduation with a concentration in public policy. This requirement may be met by completing an internship during either a semester or a summer or both. Normally, students will hold internships between their junior and senior years. The internship program is supervised by the faculty member serving as coordinator of the concentration, and specific opportunities may be worked out for the students.

ELIGIBILITY

The concentration is open to students majoring in any field, although students in the social and natural sciences are likely to be able to meet the requirements most readily. Any student with acceptable preparation is welcome to undertake work in a public policy course, subject to the priority for concentrators. For students concentrating in Public Policy and reading for Honors, certain work in the concentration may be eligible for external examination.



Religion

PATRICK HENRY, Professor and Chairperson
J. WILLIAM FROST, Professor and Director of the Friends Historical Library†
DONALD K. SWEARER, Professor†
P. LINWOOD URBAN, JR., Professor
K. PRISCILLA PEDERSON, Lecturer

Religion as a field of study encompasses historical religious traditions and varied dimensions of human experience on social and personal levels evidenced at all times and in all forms of human society. Because of the diverse and pervasive nature of religion, several methodologies have evolved for its study, including the skills of historical investigation, textual criticism, philosophical analysis, and empirical description. Added to these skills is the important ingredient of empathy toward the claims religious persons make regarding what they have perceived to be ultimately real. Focus for the several methodologies is provided by dividing the subject matter into two broad areas: The Religious Traditions of the West, and the Religious Traditions of Asia.

Any course numbered 2 through 6 may be taken as introductory to other courses in the Department. Successful completion of one of these courses is normally required for admission to courses numbered 10 and above. Religion 3, 4, 5, and 6 are particularly relevant to work in the Religious Traditions of the West, and Religion 2 to the Religious Traditions of Asia. The normal prerequisite for religion as a Course major, or an External Examination major or minor, is completion of two courses.

The major in Religion is planned through consultation with faculty members in the Department. Majors in both the Course and the External Examination Programs shall select an area of concentration — either Religious Traditions of the West or Religious Traditions of Asia — but shall also do some work in the other areas.

An important part of the Course major is the production of a sustained piece of writing. Normally, students in the Course program will elect the Senior Comprehensive Paper. However, with the consent of the Department, students may substitute a two-credit Thesis.

For advanced work in some areas of religion, foreign language facility is desirable. Students should consult members of the Department on the appropriateness of various languages, whether ancient or modern, for their own particular interests.

2. Patterns of Asian Religions.

An introduction to the study of religion through an examination of selected teachings and practices of the religious traditions of India and China structured as patterns of religious life. Material is taken primarily from Hinduism and Buddhism in India, and Confucianisim and Taoism in China.
Fall semester. Pederson.

3. Introduction to the Hebrew Scriptures.

A comprehensive introduction to the Hebrew Scriptures (Old Testament), with some study of the ancient Near Eastern setting, leading to an understanding of the development and variety of religious institutions, practices and beliefs in ancient Israel.
Fall semester. Henry.

4. Introduction to the New Testament.

A comprehensive introduction to the New Testament, with some study of the religious situation in the Roman Empire, leading to an understanding of continuities and transformations in the emergence of Christianity and its development during the first century.
Spring semester. Henry.

5. Problems of Religious Thought.

The purpose of this course is to study various

† Absent on leave 1980-81.

answers to the chief religious problems of the twentieth century. Problems include: the nature of religious experience, the existence of God, religion and morality, science and religion, and the problem of evil. Answers include those given by Martin Buber, William James, Reinhold Niebuhr, Paul Tillich and others. Students are encouraged to find their own answers and to work out their own religious beliefs.
Each semester. Urban.

6. War and Peace.

An analysis of the moral issues posed by war with consideration of the arguments for holy wars, just wars, defensive wars, pacifism, and the sancity of life. The study of America's wars from the Revolution to Vietnam will show our nation's responses to organized violence.
Fall semester. Offered 1981. Frost.

10. The Hindu Tradition.

An analysis of the Hindu religious tradition structured around the classical paths of action *(karma)*, knowledge *(jnana)*, and devotion *(bhakti)*. The course includes analyses of various mythic, poetic, and didactic texts, selected rituals, representative institutions, and symbolic expressions in art and architecture.
Spring semester. Not offered 1980-81. Swearer.

11. The Buddhist Tradition.

A study of selected facets of the worldviews of the three major schools of Asian Buddhism (Theravada, Mahayana, Vajrayana). The course includes analyses of various mythic, poetic, didactic texts, selected rituals, representative institutions, and symbolic expressions in art and architecture.
Spring semester. Pederson.

12. Religious Autobiography.

Autobiography as a genre of religious literature and as a way of understanding the religious experience of men and women. Methods and problems of studying religious autobiography as well as how religious experience is affected by culture, religious tradition, and sex will be considered. Autobiographies to be read include Augustine, C.S. Lewis, Malcolm X, Gandhi, Schweitzer, Basho, and Thoreau.
Fall semester. Not offered 1980-81.

13. Comparative Religious Mysticism

Mysticism is studied as a distinctive phenom enon within the religious traditions of Asi and the West. The writings of particula mystics, e.g., Eckhart, the Baal-shem, al Di Rumi, Ramakrishna, are studied and suc problems as mystic states of consciousnes language and mysticism, the mystic an traditional religious authority, mysticism an community are explored.
Fall semester. Not offered 1980-81. Swearer.

14. Philosophy of Religion.

An investigation of the nature of religiou faith, the problem of religious knowledg concepts of deity, the problems of evil, and th relationship of religion to ethics. Both critic and supporters of traditional religious pe spectives will be studied. (Crosslisted a Philosophy 16.)
Spring semester. Not offered 1980-81. Urban.

15. Moses: History, Tradition, Interpretation.

An investigation of the dynamic interplay o history, myth, philosophy, ritual, and societ in the origin and development of religiou tradition and understanding, through a stud of the figure of Moses as he appears in variou religious contexts (e.g., Hebrew Scriptures Philo, New Testament, Rabbinic literature, th Qur'an, art and music). Methodologica perspectives will be developed from suc modern interpreters as Weber, Freud, Bube and several historians of ancient Israel.
Fall semester. Henry.

16. The Apostolic Age.

A study of the early development of ke Christian concepts (including "orthodoxy" and "heresy," Christ, the Holy Spirit, God a creator, law, gospel, worship, baptism, ethics martyrdom, etc.) and institutional form through the letters of Paul, the Johannin literature, and the Apostolic Fathers (earl second century writers).
Spring semester. Henry.

17. History of Religion in America.

An examination of religious ideas an practices of Americans from the 17th until th 20th century. Particular emphasis is place upon the effects of religious pluralism immigrant churches, the challenge of Darwin

ism, and the relation between the church and reform movements from Puritanism to Progressivism.
Spring semester. Not offered 1980-81. Frost.

18. Quakerism.
The history of the distinctive religious and social ideas of the Friends from the time of George Fox until the present. Particular attention is paid to differences in the development of Quakerism in England and America.
Spring semester. Bronner (History Department).

19. Existentialism and Religious Belief.
A study of one of the most influential philosophical movements of the twentieth century and its impact on religious thought. Amongst philosophers attention is given to the writings of Edmund Husserl, Martin Heidegger, and Jean-Paul Sartre. Amongst religious thinkers the writings of Rudolf Bultmann, John Macquarrie, Karl Rahner, and Paul Tillich are read.
Fall semester. Urban.

28. East Asian Classics in Translation.
Readings in translation of some of the great literary and philosophical works of China and Japan including the Analects of Confucius, the Tao Te Ching, Zen works, novels such as Monkey and The Tale of Genji, Noh and Kabuki drama, and Haiku poetry. Emphasis will be placed on the student's personal response to the literature and interpretation of the material.
Spring semester. Pederson.

29. Self-Cultivation in East Asian Religions.
An exploration of practices directed towards the goals of enlightenment, religious knowledge or transformation of the human condition, drawing materials from Taoism, Zen and Buddhist Tantra. The course will investigate meditation practices and the use of symbols and sacred image, and the doctrinal contexts of these practices.
Fall semester. Pederson.

30. Religion as a Cultural Institution.
See Sociology and Anthropology 30.

31. Indian Religious Literature.
An introduction to the classical literatures and languages of Hinduism and early Buddhism. The course focusses on the *Bhagavad Gita* of the Hindu tradition and the *Dhammapada* of the Buddhist tradition. Study is in bilingual texts with traditional commentaries, and includes an elementary examination of relevant structures and vocabulary of the Sanskrit and Pali languages. Not a language course as such but of relevance to an understanding of Indo-European.
Fall semester. Not offered 1980-81. Swearer.

32. Religion in East Asia.
The major religous traditions of East Asia studied against the social and cultural background of Japan. Particular attention is given to the appropriation and later development of classical Chinese Buddhist, Confucian, and Taoist traditions; religion, nationalism, and state Shinto; religion and modes of Japanese aesthetics; and the development of new religions in the 20th Century.
Spring semester. Not offered 1980-81. Swearer.

33. The Reformation.
A study of the doctrinal, ecclesiastical, and political effects stemming from the reformation of the Roman Catholic Church in western Europe in the period from 1500 until 1688 focusing on Luther, Calvin, the Anabaptists, the Henrican settlement, and Puritanism. Topics considered include the relationship between church and state, revelation and science, and the emergence of toleration.
Fall semester. Not offered 1980-81. Frost.

34. Religion in the 19th Century.
What were the effects in religious thought and sensibility of new ways of understanding history, society, nature, and the psyche that developed in the nineteenth century? Representative figures, such as Schleiermacher, Newman, Arnold, Emerson, Khomyakov, Troeltsch, Schweitzer, and the development of distinctive schools of thought within Judaism, are considered in some detail.
Fall semester. Not offered 1980-81. Henry.

35. Formation of Christian Doctrine.
A study of the formation and classical expression of the doctrines of the Trinity,

Incarnation, Atonement, Original Sin, and the Sacraments as found in Scripture and the Early and Medieval Church. Toward the end of the semester students are given the opportunity to expound and evaluate the views of 19th and 20th century thinkers on these major themes. Such thinkers could include: K. Barth, M. Buber, R. Bultmann, K. Rahner, F. Schleiermacher, and P. Tillich.
Fall semester. Not offered 1980-81. Urban.

36. Medieval Philosophy.
Philosophical thought from Augustine to the 15th century. Attention is paid both to specific problems such as universals, analogy, and epistemology and to outstanding thinkers such as Anselm, Aquinas, and Ockham. Although the primary emphasis is historical, attention is given to the contemporary relevance of medieval thought. (Also listed as Philosophy 19.)
Spring semester. Urban.

93. Directed Reading.
Staff.

95. Tutorial.
Staff.

96. Thesis.
Majors in Course may, with Departmental permission, write a two-credit thesis.

97. Senior Paper.
Senior majors in Course will normally write a one-credit paper as the major part of their comprehensive requirement.
Spring semester. Staff.

Courses offered occasionally:

Religions of the Oppressed
Asian Religions in America
Monasticism East and West
Religion and Literature
Religion and Science

PREPARATION FOR EXTERNAL EXAMINATIONS

The Department will arrange External Examinations in the following areas, to be prepared for in the ways indicated.

Preparation by seminar:

Religious Perspective East and West (Seminar: 101).
An examination of the nature and structure of religious systems through the study of seminal thinkers or schools of thought as they influenced and were shaped by the traditions of which they were a part. Thinkers considered include Nagarjuna, Shankara, Ramanuja, Thomas Aquinas, Spinoza, and Kierkegaard. (This paper is required of all students declaring a Religion Major in their External Examination Program.)
Spring semester. Urban.

Christianity and Classical Culture (Seminar: 102).
A study of the development of Christian thought and institutions to the fifth century in the context of Greco-Roman religion and society. Readings in Lucretius, Apuleius, Plutarch, and Hellenistic religious texts, in Philo and the Dead Sea Scrolls, and in early Christian writers such as Justin Martyr, Tertullian, Origen, Athanasius, Ambrose, Augustine.
Fall semester. Henry.

Asian Religious Thought (Seminar: 103).
A study of seminal writings in India and China which have had a decisive influence on the religious traditions of these two cultures. The traditions considered are: Vedanta, Samkhya-Yoga, Mahayana Buddhism, Confucianism, and Taoism.
Fall semester. Not offered 1980-81.

Religion in Southeast Asia (Seminar: 104).
An analysis of Theravada Buddhism as a part of the cultural traditions of Sri Lanka, Burma, and Thailand. The seminar is structured in terms of three different contexts: national, village and urban. The themes dominating

these contexts are national integration, syncretism, and modernization.
Fall semester. Not offered 1980-81. Swearer.

Religion and Society (Seminar: 105). An examination of the interaction between religious values and institutions and society in different cultural contexts and time periods. Major concentration on the English Civil War, late nineteenth-century Africa, and modern America. Topics include patterns of conversion, millennialism, personal and corporate ethics, rituals, and theology.
Spring semester. Not offered 1980-81. Frost.

Contemporary Religious Thought (Seminar: 106). Representative thinkers and schools of thought in the present century. These include Karl Barth, Martin Buber, Rudolph Bultmann, Karl Rahner, Paul Tillich, and A.N. Whitehead.
Fall semester. Urban.

Preparation by combinations of courses:

For each of the external examination papers in this category, a general prospectus of subjects to be covered and materials to be read will be drawn up by the instructor(s) involved. The two courses in a particular case may not exactly cover the material of the prospectus, but much attention will be given to the prospectus in the shaping of the courses.

Indian Religion
The Hindu Tradition (Swearer)
Indian Religious Texts (Swearer)

Buddhism
The Buddhist Tradition (Swearer)
Religion in East Asia (Swearer)

Apostolic Faith and Apostolic Tradition
The Apostolic Age (Henry)
Formation of Christian Doctrine (Urban)

The Age of Faith and the Age of Reformation
Formation of Christian Doctrine (Urban)
The Reformation (Frost)

Reformation, Enlightenment, Romanticism:
The Twentieth-Century Background
The Reformation (Frost)
Religion in the Nineteenth Century (Henry)

The Protestant Traditions
The Reformation (Frost)
History of Religion in American (Frost)

Preparation by course and attachment:

Early Judaism
Early Judaism (Samuel T. Lachs — Bryn Mawr College)

Philosophy of Religion
Philosophy of Religion (Urban)

Preparation by Thesis:

Students who declare a major in Religion in their External Examination Program may, with permission of the Department, offer a thesis as one of their External Examination papers.

COURSES COMPLEMENTING RELIGION OFFERINGS AT SWARTHMORE

BRYN MAWR COLLEGE:

103a and 104a. History and Literature of the Bible.
Lachs.
001. Elementary Hebrew.
Rabi.
101. Readings in the Hebrew Bible.
Rabi.
201a. Topics in Bible Literature.
Lachs.

HAVERFORD COLLEGE:

215a. Modern Critics of Christianity.
Thiemann.
310a. Life and Theology of Martin Luther. Luman.

Sociology and Anthropology

ASMAROM LEGESSE, Professor
STEVEN PIKER, Professor and Chairman‡
JENNIE KEITH, Associate Professor, Acting Chair, 1980-81
HANS-EBERHARD MUELLER, Associate Professor§
BRAULIO MUÑOZ, Assistant Professor
JONATHAN RIEDER, Assistant Professor**

Although Sociology and Anthropology arose initially out of divergent historical traditions, they are engaged in a common task. Studies in the Department are directed toward the discovery of the general principles which help to explain the order, meaning, and coherence of human social and cultural life. To that end, work in the Department will emphasize the comparative analysis of societies and social institutions; the structure and functioning of human communities; the principles of social organization and disorganization; and the conditions which tend to foster continuity and change, consensus and conflict. Emphasis will also be laid on the relevance of Sociology and Anthropology to social problems in the modern age, particularly to the question of the nature, conditions, and limits of human freedom.

REQUIREMENTS AND RECOMMENDATIONS

Courses numbered 1 through 12 as well as 24, may serve as points of entry for students wishing to begin work in the Department. Students may take more than one entry course. Enrollment in these courses is unrestricted, and completion of one of them will normally be prerequisite to all other work in the Department (the following courses may, with permission of the instructor, be taken without prerequisite: 30, 47, 48). Applicants for major will normally be expected to have completed at least two courses in the Department. Course majors will complete a minimum of eight units of work in the Department, including a double-credit thesis tutorial to be taken during the fall and spring semesters of the senior year, as well as course 50. Course majors normally will be expected to complete course 50 no later than the spring semester of the junior year. Prospective majors may take the course during the sophomore year.

AREAS OF SPECIAL CONCENTRATION IN SOCIOLOGY AND ANTHROPOLOGY

Teaching and research interests of members of the Department cluster so as to create a number of subject matter areas within or between the two disciplines in which students may take a concentration of work, in course or seminar format, or both. The Department here identifies these general areas and the faculty members who work within them, and encourages students interested in them to meet with one or more of the indicated Department members to explore program of study possibilities.

A) Social Theory and Social Philosophy (Mueller, Muñoz, Rieder)
B) Cultural Ecology, Human Adaptation, and Human Evolution (Legesse, Piker)

** Fall semester, 1980.
‡ Absent on leave. 1980-81.
§ Inactive, 1980-81.

C) Post-Industrial Society (Keith, Mueller, Rieder)
D) Cultural and Ethnic Pluralism (Keith, Legesse, Rieder)
E) Psychology and Culture (Legesse, Mueller, Piker and Rieder)
F) Sociology of Art and Intellectual Life (Mueller, Muñoz, Rieder)
G) Modernization and Development in the West and non-Western World (Keith, Legesse, Mueller, Rieder)

1. Modern America: Culture, Society and State.

The analysis of the central patterns and processes of modern America. Topics include the evolution of corporate capitalism; class, power and ethnicity; inequality and meritocracy; political parties, ideology and participation, mass culture and intellectuals.
Fall semester. Rieder.

3. Creation of Community.

The process through which both the structures and the feelings of community are created, the conditions which promote or obstruct that creative process, and the consequences for the individuals who participate in it, will be examined through comparison of community formation in a variety of settings: utopias, kibbutzim, retirement villages, suburbs, mental institutions.
Fall semester. Keith.

4. Environment, Society, and Culture Change.

This is an introductory course dealing with social and cultural adaptation to natural and man-made environments. The course examines how simpler societies regulated their population and maintained a steady state, whereas modern societies are faced with great social upheavals associated with rapid population growth, economic development, and unprecedented levels of urbanization. The central theme is this: Can present rates of change be sustained? If not, what are the alternatives? Some attention will be paid to the social effects of crowding and to territoriality, personal space, privacy, and stress as possible ecological regulators that are emerging in urban society.
Primarily for freshmen and sophomores.
Spring semester. Not offered 1980-81. Legesse.

5. Freshman Seminar: The Meaning of Work.

This seminar will take up theory and research pertaining to the social organization of work and the meaning of work experience in modern societies. Among the topics to be discussed are the concept of career, the nature of work-satisfaction, the process of professionalization, degrees of commitment to work, the relationship of work and leisure, mid-life career change and retirement, both voluntary and involuntary. Occupational subcultures to be studied will include several types of industrial workers, law, medicine, education, and the military. Special attention will be devoted to the relationship of work and family life, and the problems associated with the work of women.
Fall semester. Staff

6. Freshman Seminar: Classics in the Study of American Society and Culture.

Sociologists and anthropologists have made a unique contribution to the study and interpretation of American society. This course reviews a number of classic studies and places them in historical context. An attempt will be made to determine whether or not these studies support a particular interpretation of the character of American society and culture. Among the studies to be read are: Alexis de Tocqueville, *Democracy in America;* Thorstein Veblen, *The Theory of the Leisure Class;* W. Lloyd Warner, *American Life: Dream and Reality;* William Foote Whyte, *Street Corner Society;* E. Franklin Frazier, *Black Bourgeoisie;* C. Wright Mills, *The Power Elite;* David Riesman, *The Lonely Crowd.*

Upper-class students may be admitted with permission of the instructor.
Spring Semester. Staff

7. Sex Roles, Power, and Identity.

An exploration of the social, political, and psychological implications of gender, drawing on socio-biological, cross-cultural, and historical materials. The primary emphasis will be placed on developments in contemporary America.
Spring Semester. Rieder.

10. Human Evolution.

This course emphasizes the human condition,

or culture, as a mode of adaptation to be seen in evolutionary perspective. Topics to be treated include: the relationship of Hominids of the Order of the Primates; stages in the evolution of humankind; and the evolution of distinctively cultural systems of behavior. Special emphasis will be given to the evolution of language, the evolution of the family and incest taboos, and bio-evolutionary theses on human nature.
Spring semester, Not offered 1980-81. Piker.

11. Sociological Dimensions of Literature.

This course analyzes the relationship between the literary act and society from a sociological perspective. Topics examined include: a) social factors making for the rise of literary genres (an extensive analysis of the rise of the European novel is undertaken); b) social factors underlying the rise and fall of literary "schools" or "movements"; c) effects of the social position of the writer on his work; d) role of the public in literary production; e) the patterns of distribution and consumption of literary goods. The class also analyzes major contemporary literary products.
Prerequisite: Entry-level course or permission of the instructor.
Not offered 1980-81. Muñoz.

12. Social Origins of Inequality.

Study of the major historical forms of social inequality such as unequal kinship groups in tribal societies, castes and estates in peasant societies, and classes and status groups in industrial societies. Emphasis will be given to their origin in economic, political, and cultural organizations of the societies, as well as to the evolution of inequality from the simplest to the most complex societies. The course will culminate with a comparison of contemporary capitalist and socialist societies.
Fall semester. Not offered 1980-81. Mueller.

24. Psychological Anthropology.

Sometimes called culture and personality, this field explores the relationship between the individual and his or her culture. The course treats the following issues: a) the psychological, or symbolic, capacities presupposed by culture; b) socialization, or the transmission of culture from generation to generation; c) the cultural distribution of personality traits; and d) culture and mental health. Case materials will be principally, but not exclusively, non-Western, and the cross-cultural study of child rearing will receive particular emphasis.
Prerequisites: S&A 1-12, Psychology 3, or permission of the instructor.
Fall semester. Not offered 1980-81. Piker.

25h. Sociology through Literature.

This half course introduces students to the uses of literature (novels, plays, poetry, folklore) as a social indicator. The course is divided into two parts. The first half introduces hermeneutics as a *sociological* method of research. Rigorous analysis of selected texts is carried out. The second half of the course explores a) the uses of narrative (including autobiography, biography, confessional literature, epistolary, historical, and anthropological novels) as sociological data; and b) the uses of literature in the elucidation of specific areas of sociological investigation such as The Family.
Not offered 1980-81. Muñoz.

27. Afro-American Culture and Society.

Black culture is examined at several stages of its development in the twentieth century — as a culture of survival, assimilation, pan-Africanism, prophetism, nationalism, and revolution. The sociology of Black American communities is viewed in terms of the lifecycle, family structure, associational life, religious institutions, and class structure, and how these systems react to racism, urban migration, economic deprivation, and political change.
Fall semester. Legesse.

30. Religion as a Cultural Institution.

(Cross-listed as Religion 30.) The focus is exclusively cross-cultural, and case materials will be drawn from both civilized and preliterate traditions. The following topics will be taken up: the content of religious symbolism, religion as a force for both social stability and social change, and the psychological bases for religious belief.
Fall semester. Not offered 1980-81. Piker.

33. Ecology and Society.

Examination of different types of ecological conditions and how they influence pastoral, agricultural, peri-urban and urban social systems. Special attention will be given to the

world food crisis, to climatic change, demographic pressures, environmental degradation and a wide range of adaptive strategies that have developed in response to ecological stress.
Fall semester. Not offered 1980-81. Legesse.

36. Peoples and Cultures of Africa.

An introduction to traditional and modern Africa with emphasis on representative societies from East and West Africa. The course examines pre-colonial political and social institutions, African responses to colonial domination, and the impact of urbanization and economic development during the post-colonial period.
Fall semester. Legesse.

42. Caribbean Society.

A review of the attempt to develop generalizations about the structure of Caribbean society. Theoretical materials will focus on the historical role of slavery, the nature of plural societies, race, class, ethnicity, and specific institutions such as the family, the school, the church, and the political structure.
Spring semester. Staff

43. Society and Culture in Spanish America.

The relationship between society and culture in Spanish America. Recent and historical developments in social stratification and ethnic relations will be considered as crucial factors underlying Spanish-American culture. Particular attention will be given to Spanish-American social thought as evidenced in social sciences research, theology, philosophy, and literature.
Fall semester. Muñoz.

44. Social Stratification.

Comparative study of structured social inequality, processes of class formation, and conditions of class conflict since the industrial revolution.
Spring semester. Not offered 1980-81. Mueller.

45. Field Studies in Primate Behavior.

(Cross-listed as Biology 45.) An investigation of primate ethology as studied in the animal's natural environment. Particular emphasis will be placed on those studies relating social behavior to habitat or population stress. The course will include both lecture and seminar format; although there is no scheduled laboratory, students will be expected to participate in at least one field trip.
Prerequisites: Biology 2 or one introductory level course in Sociology/Anthropology giving an appropriate background in anthropology.
Fall semester. Williams.

46. Political Anthropology.

This course will utilize the comparative perspective of anthropology to study the ways in which authority is acquired and accepted as legitimate, the ways in which decisions are made or avoided, and the ways in which conflict is defined, mediated, and resolved or extended. Subject matter will include political communities in various cultural contexts and at various levels of social and technological complexity.
Spring semester. Not offered 1980-81. Keith.

47. Education and Society.

(Also listed as Education 47.) Classical views of education and society including Dewey and Durkheim. Comparative study of the functions of schools from the perspective of sociology and anthropology. Among the topics to be discussed are the relation of educational institutions to other sectors of society, and the question of alternatives to schooling in both modernizing and "post-industrial" societies.
Fall semester. Staff

48. Sociology of Higher Education.

(Also listed as Education 48.) This course will explore the theory and practice of higher education from a sociological point of view. Students, faculty, curriculum, governance and decision-making, nontraditional approaches, and the college and university as key institutions in modern industrial society will be the focus of study. Field observation and interviewing at one of the many institutions in the Greater Philadelphia area will represent an important component of the course.
Spring semester. Staff

49. The Meaning of Work: Sociology of Occupations and Professions.

This course will take up theory and research pertaining to the social organization of work and the meaning of work experience in modern societies. Among the topics to be discussed are the concept of career, the nature of work-satisfaction, the process of profession-

alization, degrees of commitment to work, the relationship of work and leisure, mid-life career change and retirement, both voluntary and involuntary. Occupational subcultures to be studied will include several types of industrial workers, law, medicine, education, and the military. Special attention will be devoted to the relationship of work and family life, and to the problems associated with the work of women.
Not offered 1980-81. Staff

50. Intellectual Foundations of Contemporary Sociology and Anthropology.

Examination of fundamental and recurrent theoretical issues in sociology and anthropology from the perspective of intellectual history. This course will normally be taken by Course majors during their junior year. It is open to non-majors, though freshman and sophomores must have permission of the Department chairman.
Spring semester. Staff.

55. Aging in Society.

The course will examine aging from a cross-cultural perspective with the goal of distinguishing universal aspects of the aging process from the diverse effects of social and cultural context on the roles of older people and the use of age as a principle of group definition. Specific problems will include relations between generations, political organization of older people, and the role of older people in the family and the household.
Fall semester. Keith.

56. Urban Anthropology.

Cross-cultural, comparative study of social life in cities, with particular emphasis on bases and strategies of group formation and maintenance, e.g., kinship, ethnicity, friendship, residential separation, ritual. Readings represent a wide range of societies both geographically and culturally; and all students in the course will do a field work project.
Not offered 1980-81. Keith.

60. Spanish American Society Through Its Novel.

(Also listed as SAL 60 — see Modern Languages.) This course will explore the relationship between society and the novel in Spanish America. Selected works by Carlos Fuentes, Mario Vargas Llosa, Gabriel García Márquez, Miguel Angel Asturias and others will be discussed in conjunction with sociological patterns in contemporary Spanish America.
Spring semester. Not offered 1980-81. Hassett and Muñoz.

61. Knowledge and Society.

Exploration of the relationship between forms of social, economic, and political life on the one hand and forms of consciousness, theoretical systems of thought, and knowledge of everyday life on the other. The course will examine the major approaches to the "sociology of knowledge" and turn to some of the recent critical theories of contemporary culture that have come from this sociological tradition.
Spring semester. Not offered 1980-81. Mueller.

62. Political Sociology.

Study of political elites, political institutions, normal politics, and protest movements from the perspective of comparative historical sociology.
Not offered 1980-81. Mueller.

65. The Sociology of Race and Ethnicity.

A review of theories and forms of ethnic attachment, employing cross-cultural and historical perspectives, with accent on the American experience. Topics include: the sources and functions of communalism; assimilation, pluralism, and inequality; ethnicity in traditional and advanced societies; immigration, class, and race in American development; black mobilization and white reaction; the debate on meritocracy; the limits of liberalism.
Fall semester. Not offered 1980-81. Rieder.

66. Urban Sociology; the Social Life of Cities.

Placing the American metropolis in developmental and comparative context, this survey of urban life considers: classical theories of the city; the city and the rise of capitalism; third world urbanization; cultural production and change; the ideology of private life in America; the politics of race and ethnicity; regional imbalance, fiscal crisis, and public policy; poverty and social disorder; the city as metaphor.
Fall semester. Rieder.

81. Colloquium: The Sociology of Intellectual Life.

Study of the social conditions of intellectual life in the realms of science, literature, art, and music. Particular attention will be given to the social aspects of creative process and changes in cultural taste.
Not offered 1980-81. Mueller.

82. Colloquium: Ethnographic Analysis.

An examination of three intellectual traditions and analytical procedures in anthropology: the French school of structuralist thought (Levi-Strauss), the Manchester school of dynamic anthropology (Turner), and an American school of empiricist research (Murdoch). Third World critique of these intellectual traditions will receive special attention.
Prerequisite: One of the entry-level courses or permission of the instructor.
Spring semester. Legesse.

83. Colloquium: Art and Society.

The course is divided into two parts. the first part examines the relationship between art and society from a sociological perspective. Works by Lukacs, Benjamin, Gadamer, and others will be discussed in this connection. The second part introduces hermeneutics as a sociological method for the interpretation of art. Rigorous analysis of selected texts is carried out. This semester the class will examine selected works by Plato and, time permitting, Borges.
Prerequisite: permission of the instructor.
Fall semester. Muñoz.

91A. Special Topics: Development and Urbanization in the Third World.

An examination of the post-colonial social transformation that occurred in the Third World. This process will be considered in the context of demographic and ecological change, the green revolution, and the rural-urban exodus. The problem of urban poverty will receive special attention. Case material will be drawn from Africa, Asia, and Latin America.
Not offered 1980-81. Legesse.

91D. Advanced Urban Research.

Students participate in evaluation research and program development at Hahnemann Hospital Community Mental Health and Mental Retardation Center. Field notes on this work are turned in weekly, and class members meet regularly at Swarthmore to discuss their experiences. Juniors and seniors with a B average who are willing to spend 1½ days per week at Hahnemann are eligible to apply. Transportation to Hahnemann is paid, and credit hours vary with individual involvement in the program.

93. Directed Reading.

Individual or group study in fields of special interest to the students not dealt with in the regular course offerings. Consent of the chairman and of the instructor is required.
Members of the Department.

96-97. Thesis. Theses will be required of all Course majors.

Seniors in the Course program will normally take two consecutive semesters of thesis tutorial. Students are urged to discuss their thesis proposals with faculty during the spring semester of their junior year, especially if they are interested in the possibility of field work.
Members of the Department.

The following courses, with attachments, can be taken in preparation for Honors examinations: S&A 44, 81.

SEMINARS

101. Critical Modern Social Theory.

This seminar will trace the development of critical modern social theory from the works of Marx to present day social theorists. Particular attention will be paid to selected works by Marx, Lukacs, Adorno, Horkheimer, Marcuse, Unger, and Habermas.
Prerequisites: advanced work in Sociology/Anthropology, Philosophy, or Political Science; or permission of the instructor.
Spring semester. Muñoz.

102. Creation of Community.

The central question for the seminar is under what conditions community can successfully be created. Utopian experiments, squatter settlements and institutions such as retirement residences and monasteries will be compared as examples of intentional and unintentional, planned and unplanned community creation.
Spring semester. Keith.

103. Political Anthropology.

A cross-cultural perspective on politics: the structures and processes of authority, conflict, and group definition. Specific problems will include legitimation of authority, decision-making, agenda-building, expansion, containment and resolution of conflict. Particular emphasis will be placed on symbolic aspects of politics. Readings will cover a wide range of cultures and degrees of societal complexity; in addition, each student will work intensively with ethnographic material from one traditional society.
Not offered 1980-81. Keith.

104. Psychological Anthropology.

This seminar deals with a growing interdisciplinary field that draws upon cultural anthropology, human evolution and biology, psychology (particularly developmental and cognitive), and linguistics. The following specific topics will be treated: psychobiological foundations of culture, human maturation, socialization, and culture and mental health.
Spring semester. Not offered 1980-81. Piker.

105. Modern Social Theory.

An analysis of selected works by the founders of modern social theory and contemporary social theorists. Works by Marx, Weber, Durkheim, Parsons, and Schutz will be discussed.
Fall semester. Muñoz.

107. Religion as a Cultural Institution.

The relations between religious belief and practice, psychological properties of individuals and society. The following specific topics will be treated: religious evolution; religion as a force for both social stability and social change; the psychological bases for religious belief. Major theories to be considered include those of Max Weber, Emile Durkheim, and Sigmund Freud.
Fall semester. Not offered 1980-81. Piker.

108. Social Stratification.

Comparative study of structured social inequality, processes of class formation, and conditions of class conflict since the industrial revolution.
Spring semester. Not offered 1980-81. Mueller.

109. Social and Cultural Change.

This seminar will examine the theories of social movements, modernization, Westernization, cultural diffusion, and stages of development as they apply to the process of social change in non-Western societies. Case studies will be drawn from China, India, Indonesia, Peru, Brazil, Mexico, Nigeria, Kenya, and South Africa.
Prerequisites: Entry-level course in Sociology-Anthropology or permission of the instructor.
Srping semester. Legesse.

110. Sociology of Occupations and Professions.

This seminar will take up theory and research pertaining to the social organization of work and the meaning of work experience in modern societies. Among the topics to be discussed are the concept of career, the nature of work-satisfaction, the process of professionalization, degrees of commitment to work, the relationship of work and leisure, mid-life career change and retirement, both voluntary and involuntary. Occupational subcultures to be studied will include several types of industrial workers, law, medicine, education, and the military. Special attention will be devoted to the relationship of work and family life, and to the problems associated with the work of women.
Fall semester. Staff

114. Political Sociology.

Study of political elites, political institutions, normal politics, and protest movements from the perspective of comparative historical sociology.
Not offered 1980-81. Mueller.

116. Post-Industrial Society: Modern America.

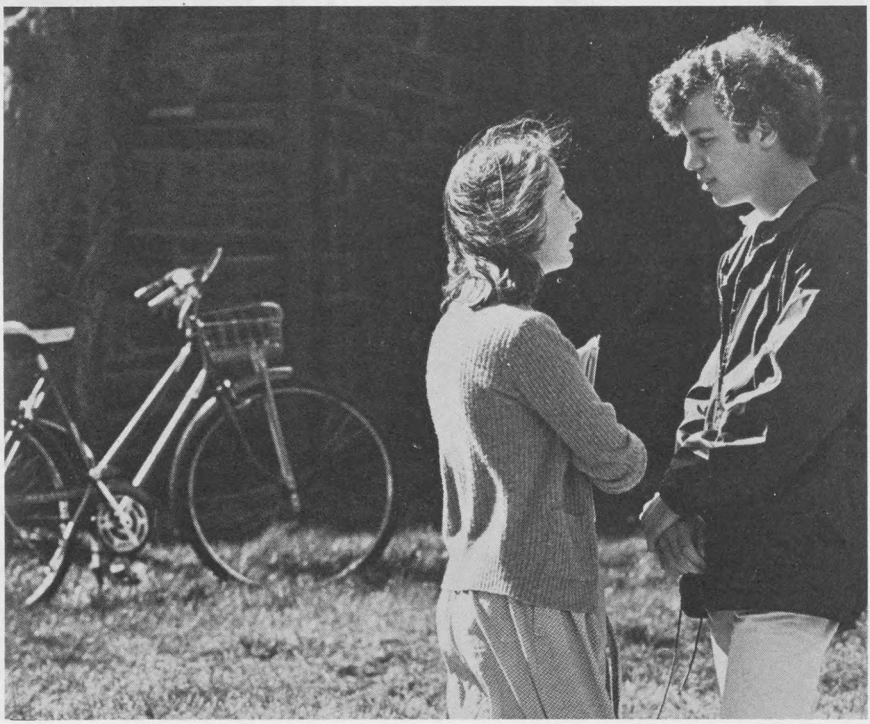
A theoretical and historical exploration of continuity, conflict, and change in America's "exceptional" culture, economy, and polity in the post-World War Two era.
Spring semester. Rieder.

117. Urban Anthropology.
Cross-cultural, comparative study of social life in cities, with particular emphasis on bases and strategies of group formation and maintenance, e.g., kinship, ethnicity, friendship, residential separation, ritual. Readings represent a wide range of societies both geographically and culturally; and all students in the seminar will do a field work project.
Not offered 1980-81. Keith.

118. Ecology and Society.
Examination of different types of ecological conditions and how they influence pastoral, agricultural, peri-urban, and urban social systems. Special attention will be given to the world food crisis, to climatic change, demographic pressures, environmental degradation, and a wide range of adaptive strategies that have developed in response to ecological stress.
Fall semester. Legesse.

119. Age, Culture, and Society.
The social and cultural significance of age will be explained in this seminar. Generational conflicts, rites of passage, peer grouping, cultural definitions of the life course will be major topics. Case material will include East-African age grades, modern retirement communities, life history from various cultures. Seminar members will also do observation and interview projects focused on age.
Not offered 1980-81. Keith.

180. Thesis.
Honors candidates who choose to do so will customarily write theses during the senior year. Students are urged to have their thesis proposals approved as early as possible during the junior year.
Members of the Department.



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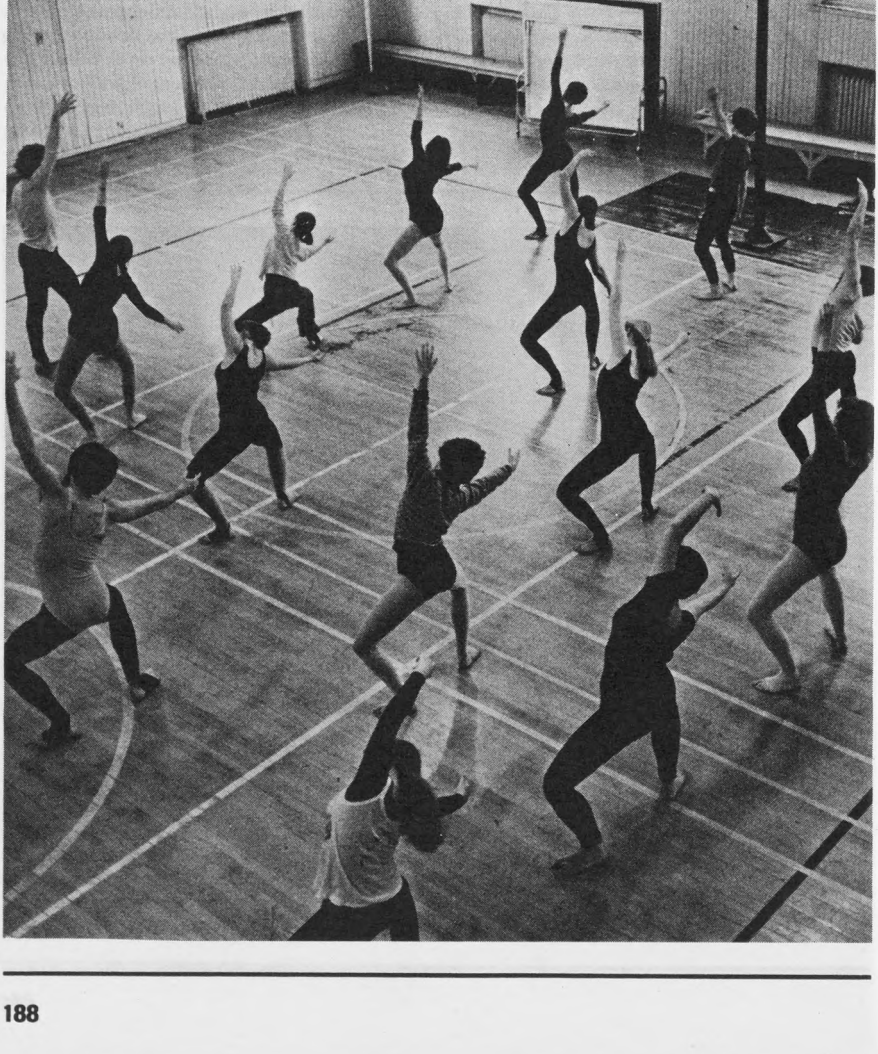

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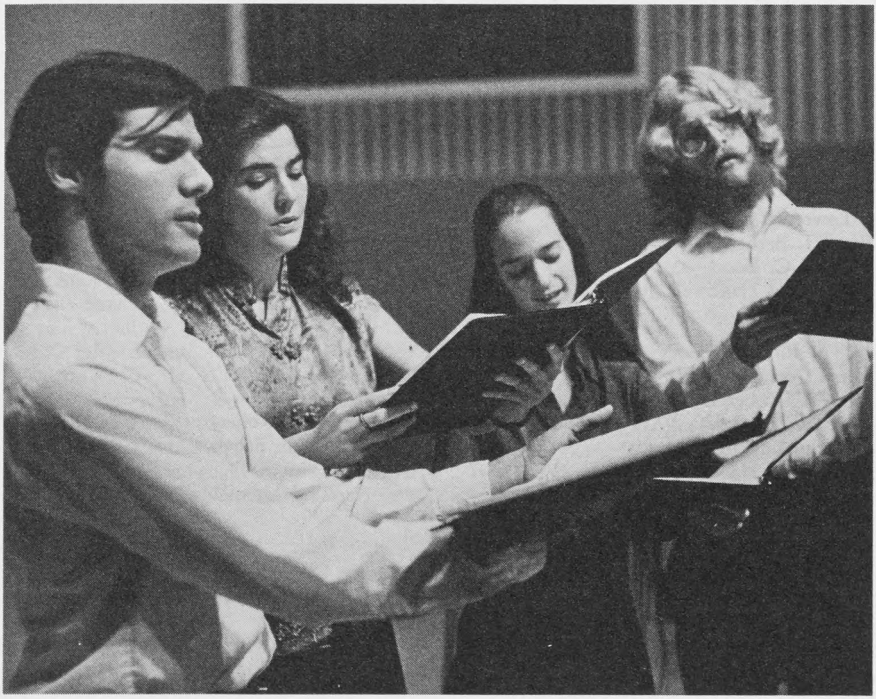

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Term Expires May

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Samuel I. Kalkstein '37, Green Hill Ranch, 23690 Alcudia Rd., Hinkley, CA 92347

John G. Moxey, Jr. '35, 1404 Johnny's Way, RD 3, West Chester, PA 19380

Paula Lawrence Wehmiller '67, 201 Harvard Ave., Swarthmore, PA 19081

Mary Lou Dutton Wolfe '46, 337 Barren Hill Rd., Conshohocken, PA 19424

Richard J. Yeager '67, 1300 Ocean Ave., Mantaloking, NJ 08738.

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Barbara Weber Mather '65, 2001 Fidelity Bldg., Philadelphia, PA 19109

Roger J. Youman '53, 752 Mancill Road, Wayne, PA 19087

1983 Elizabeth Maxfield Crofts '63, 1373 Butternut Dr., Southampton, PA 18966

Frances Pace Crosby '26, 227 N. Swarthmore Ave., Swarthmore, PA 19081

John B. Ferguson, Jr. '41, 1736 Paper Mill Rd., Meadowbrook, PA 19046

John W. Seybold '36, 6 Roylencroft Lane, Rose Valley, PA 19063

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Frances Halsband Kliment '65, 35 W. 90th St., New York, NY 10024

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Sally A. Warren '65, 11 East 63rd St., Apt. 3A, New York, NY 10021

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Will McLain III '29, P.O. Box 174, Hope, NJ 07844

Norman B. Sher '52, 2347 East 63rd St., Brooklyn, NY 11234

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Zone D

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1983 Eleanor Duguid Craig '60, 808 Greenwood Road, Wilmington, DE 19807

Peter G. Gould '73, 1405 Kenwood Avenue, Alexandria, VA 22302

Zone E

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Nicholas Andrew Beldecos '43, 1336 Shady Ave., Pittsburgh, PA 15217

Zone F

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1982 Ned B. Williams '34, 4 Gull Point Rd., Hilton Head Island, SC 29928

Louise Lichtenberg Wilson '67, 201 E. Wesley Rd., NE, Atlanta, GA 30305

Zone G

Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, South Dakota, Wisconsin

1982 Marilyn Mathews Bendiksen '59, 3470 Greenbriar Ct, LaCrosse, WI 54601

Fred H. Montgomery '68, 2253 N. Burling St., Chicago, IL 60614

1983 John F. Cromwell '51, 454 Ivywood Drive, Ballwin, MO 63011

Margaret Barber Scholten '36, 930 W. Inkster Avenue, Kalamazoo, MI 49001

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Kendall Landis, B.A., Swarthmore College; M.A., Wesleyan University, Vice President — Alumni, Development, Public Relations. 550 Elm Avenue.

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EMERITI

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** Fall Semester, 1980.
*** Spring semester, 1981.

§ Single Course, Byrn Mawr: Haverford-Swarthmore faculty exchange program.

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*** Spring semester, 1981.

** Fall semester, 1980.

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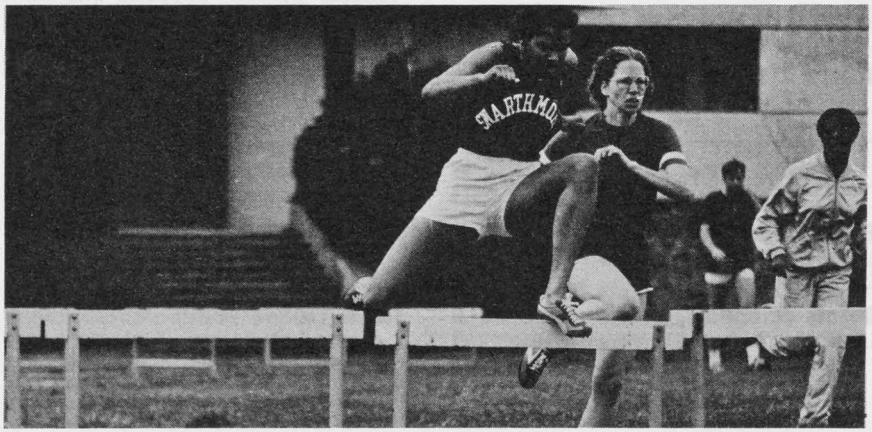

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Professor Harold Bright, *University of Pennsylvania*; Professor Maitland Jones, Jr., *Princeton University*; Professor James H. Loehlin, *Wellesley College*; Professor Donald McClure, *Princeton University*.

Classics
Professor Michael C. Alexander, *University of Illinois*; Professor Marylin B. Arthur, *Wesleyan University*; Professor Sylvia G. Brown, *University of Pennsylvania*; Professor Floyd L. Moreland, *The Graduate School and University Center of CUNY*.

Economics
Professor Christopher Clague, *University of Maryland*; Professor Noel Farley, *Bryn Mawr College*; Dr. John Haring, *Glassman-Oliver Economic Consultants*; Professor Holland Hunter, *Haverford College*; Professor John Page, *Princeton University*; Professor John Pettingill, *University of Virginia*; Professor Robert Summers, *University of Pennsylvania*; Professor Richard Tresch, *Boston College*; Professor Sidney Weintraub, *University of Pennsylvania*.

Engineering
Dr. Joel I. Abrams, *University of Pittsburgh*; Dr. Raouf Farag, *RCA*; Dr. Paul Kalata, *Drexel University*; Dr. Frederick D. Ketterer, *University of Pennsylvania*; Dr. Charles ReVelle, *Johns Hopkins University*.

English Literature
Professor Richard H. Brodhead, *Yale University*; Professor Joan Ferrante, *Columbia University*; Professor Michael Goldman, *Princeton University*; Professor Lawrence Graver, *Williams College*; Professor Edward B. Irving, Jr., *University of Pennsylvania*; Professor Richard A. Johnson, *Mount Holyoke College*; Professor Alexander Leggatt, *University of Toronto*; Professor Thomas P. Roche, Jr., *Princeton University*.

History
Professor Linda Grant DePauw, *George Washington University*; Professor Richard H. Elphick, *Wesleyan University*; Professor Robert Harding, *Yale University*; Professor Mary S. Hartman, *Douglass College*; Professor Margaret L. King, *Brooklyn College*; Professor Bruce Kuklick, *University of Pennsylvania*; Professor Jonathan Ocko, *Harvard Law School*; Professor Norman Rich, *Brown University*; Professor Alexander V. Riasonovsky, *University of Pennsylvania*.

Linguistics
Professor Robert Fiengo, *Queens College, CUNY*; Professor Harris Savin, *University of Pennsylvania*; Dr. Jane Tompkins, *Temple University*.

Mathematics
Professor Kenneth P. Bogart, *Dartmouth College*; Professor Clifford J. Earle, Jr., *Cornell University*; Professor Jerry L. Kazdan, *University of Pennsylvania*; Professor Helene Shapiro, *University of Wisconsin*.

French
Professor Victor Brombert, *Princeton University*; Professor Marcel Gutwirth, *Haverford College*.

German
Professor Steven R. Cerf, *Bowdoin College*.

Philosophy
Professor Martha Bolton, *Douglass College*; Professor Robert Brumbaugh, *Yale University*; Professor Joshua Cohen, *Massachusetts Institute of Technology*; Professor Geoffrey Joseph, *University of Wisconsin*; Professor George L. Kline, *Bryn Mawr College*.

Visiting Examiners 1980

Physics
Professor William C. Davidon, *Haverford College*; Professor Eugene Golowich, *University of Massachusetts*; Professor Melvin Lax, *City College of the CUNY.*

Political Science
Professor Douglas Bennett, *Temple University*; Professor Thomas P. Bernstein, *Columbia University*; Professor William Connolly, *University of Massachusetts*; Professor Thomas Ferguson, *Massachusetts Institute of Technology*; Professor Robert Kaufman, *Douglass College*; Professor Samuel Krislov, *The Brookings Institution*; Professor Peter Lange, *Harvard University*; Professor Richard Mansbach, *Rutgers College*; Professor Bernard Mennis, *Temple University.*

Psychology
Professor Jonathan Baron, *University of Pennsylvania*; Professor Carol Gilligan, *Harvard Graduate School of Education*; Professor Jean Kristeller, *Yale University*; Professor Harris Savin, *University of Pennsylvania*; Professor Martin Seligman, *University of Pennsylvania*; Professor Phillip Shaver, *University of Denver*; Professor Elizabeth Spelke, *University of Pennsylvania.*

Religion
Professor Francine Cardman, *Weston School of Theology*; Professor Ninian Smart, *University of California.*

Sociology & Anthropology
Professor Sandra Barnes, *University of Pennsylvania*; Professor Philip Kilbride, *Bryn Mawr College*; Philip Pachoda, *Senior Editor, Pantheon Books*; Professor Daniel Rose, *University of Pennsylvania*; Professor R. Stephen Warner, *University of Illinois.*

Degrees Conferred

May 26, 1980

BACHELOR OF ARTS

Katherine Anne Abele, *Medieval Studies*
Karen B. Adelman, *Political Science*
Katherine M. Allen, *Economics*
Angela Jordan Alston, *Biology & Philosophy*
David Kenneth Andres, *Economics & Psychology*
Gohalem Assefa, *German*
Eric Martin Ball, *Biology*
Richard Kevin Ballot, *Psychology*
Nancy J. Banks, *English Literature*
Lisa Gene Barber, *Biology*
Ruth Ellen Bardon, *Literature*
Rona Lynn Barksdale*, *Sociology & Anthropology*
Margaret Wethered Barroll, *Physics*
Saralyn Bass, *Economics*
Mary Teresa Battenfeld, *Linguistics*
Alan A. Bednarski, *Philosophy*
Angela A. Beldecos, *Art History*
Megan Anne Bevan, *English Literature*
Deborah Kathleen Bezanson, *Biology*
Jean Blaney, *History*
Blair David Boatwright, *Mathematics*
Marian Frances Bock, *English Literature*
Mark W. Bode, *Political Science*
Nina Denice Bonner*, *Psychology*
David Alan Boulifard, *English Literature*
Patricia Lynn Brady, *Music & Special Major: Sociolinguistics & Music*
Jacqueline M. Brokaw*ŧ, *History*
Sylvetta Ann Brown*, *English Literature*
John Clarke Browning, *History*
Richard Mark Brunell, *Political Science*
Pamela Marie Burch, *Medieval Studies*
Gene Burns, *Psychology*
Robert Kirwan Campbell, *History*
Robert Post·Cannon, *English Literature*
Patricia Lynn Carpenter, *Biology*
Christopher John Caruso, *Economics*
Thomas Edward Cavin, *Mathematics*
Lisa Nicole Cawley, *English Literature*
Tiela M.K. Chalmers, *History*
Mitchell Thomas Chase*, *Psychology*
Susan Eugene Chimene, *Art History*
Wei-Wei Chiu, *Economics*
Michael Adam Chodos, *English Literature*
David Huaiming Chow, *English Literature*
James Vernon Coe, Jr., *Chemistry*
Kevin Barry Connolly, *Biology*
Jane Nicole Conrad, *Sociology & Anthropology*
John Pierre Constantino, *Economics*
Catherine Marie Cook, *English Literature*
Robert Joseph Coontz, Jr., *Mathematics*
Stuart Kent Cornew, *Political Science*
Eric Owen Corngold, *Political Science*
Carol Cornsweet, *Psychology*
David Alexander Crow, *History*
Donna Crystal, *Mathematics*
Mary Allerton Cushman, *English Literature with Concentration in Theatre*
Carol Ann Cutkosky, *Economics*
Frederick Lowe Daly, *English Literature*
Gregg Loren Davis, *History*
Robert Warren Davis, *Political Science*
Jennifer Love Denman, *German*
Lisa Maria Diaz**, *Political Science*
Lois Augusta Doggett, *Special Major: French & Linguistics*
Eric Christopher Eichenwald, *History*
Eric S. Eipper, *Religion*
Douglas James Elliott, *Economics*
Samuel Eric Epstein, *Biology*
Jordan Eth, *Economics*
Rosemarie Cecelia Ewing, *Special Major: Linguistics & Social Psychology*
William Thomas Ewing, III, *Art History*
Benjamin D. Fields, *Political Science*
Michelle Ann Fineblum, *Philosophy & Psychology*
Mark Jay Fireman, *Chemistry*
Martin E. Fleisher, *Philosphy*
Alison Ann Fox***, *Economics & Political Science*
Marc Robert Freedman, *Sociology & Anthropology*
Jane Eden Friedman, *Medieval Studies*
Carol Friesen, *English Literature*
Carl Chandler Fristrom, *Physics*
Steven Robert Froehlich, *Philosophy*
Barbara Lynne Gandek, *Economics*
Khushro Ghandhi, *Philosophy*
Shannon Margaret Gifford, *Art History*

* with Concentration in Black Studies.
** with Concentration in Asian Studies.
*** with Concentration in Public Policy.

ŧ Secondary School Teaching Certificate.

Ira Adam Gitlin, *Greek*
Denise Marie Green, *English Literature*
Mitchell Ray Grunes, *Physics*
Greta Gugenheim, *Economics*
Robert Edwin Gurwitt, *Political Science*
Laurent Guy, *Economics*
Abigail Ann Hafer, *Biology*
Amy Anne Halio, *Special Major: Psychobiology*
Janet Virginia Hallahan, *Philosophy*
Jane Elizabeth Halsema, *Economics & Political Science*
Denise Michele Heberle, *Psychology*
Lisa Jane Heller, *Special Major: Spanish & Sociology*
Robert Gary Herman, *Political Science*
Kathryn A. Herrmann, *Political Science*
David Hertz, *History*
Daniel Marc Hittner, *Chemistry*
Macfarlane Hoffman, *Philosophy*
Timothy Paul Hofmeister, *German*
Alvin Orlando Holt*, *English Literature*
Keiichi Homma, *Physics*
Jenny A. Hourihan, *Economics*
Joy Ann Hulse, *Music*
Kenneth D. Hutchins, *Biology*
Catherine Eaton Hutchison, *Literature*
Melanie Reed Ingalls, *Art History*
Eric Edward Ingbar, *Sociology & Anthropology*
Patricia Anne Jameson, *Philosophy*
Judith Christina Jansen, *Art History*
Rondy Edward Jennings, *Economics*
Leon Jones, *Philosophy*
T. Elwood Kanwit, *Sociology & Anthropology*
Charles Stanley Kaplan, *Special Major: Psychobiology*
Philip James Karanian, *Chemistry*
Edward Sean Kelley, *Biology*
John Joseph Kelly, III, *Biology*
David Mac Lean Kennedy, *Philosophy*
Mary Catherine Kennedy, *Political Science*
Janice Klunder, *Chemistry*
Peter Brampton Koelle, *Political Science-International Relations & Russian*
David Ben Kraskow, *Political Science*
Michael Karl Kuehlwein, *Economics*
Paul Erwin Kuenstner, *English Literature*
Caroline Paula Kurtz, *English Literature*
Kerrie Lynne Kyde, *English Literature & Political Science*
Robert Blodgett Kyle, III, *History*
Jo Denise Landes, *Sociology & Anthropology*
Todd Mason LaPorte, *Sociology & Anthropology*
Christopher Laszlo, *Economics*
Frederick James Laufer, *Chemistry*
Cecilia Lee, *Biology*
Darrell Anthony Lee, *Economics*
Frederick Stinson Leichter, *Mathematics*
Max Leuchter, *History*
Jay Edward Levenson, *Sociology & Anthropology*
Daniel Lewis Levine, *Political Science*
David Bruce Levine, *Mathematics*
Daniel Levitt, *Psychology*
Emily J. Levy, *Chemistry*
Andrea Susan Libresco, *History*
Jairam Rao Lingappa, *Physics*
Catherine Schuyler Livingston, *English Literature & German*
David Joseph Lloyd, *Biology*
Patricia Annette Lokey‡, *Biology*
Thomas John Long, *Political Science*
Susan Lee Louis, *Special Major: Religion & Culture*
Francis Fowler MacGrath, *Economics & Philosophy*
David Richmond Marble, *Physics*
Daniel Allan Marcus, *English Literature*
Marcelle Renee Martin, *English Literature & French*
Bruce Stewart Maxwell, *History*
Maureen Ann McBride, *Art History*
Gary J. McCabe, *Political Science*
Lucinda Jayne McElwee, *Economics*
Charles Francis McGovern, *History*
Anne Maureen McGuire, *Psychology & Philosophy*
Gregory James McIlvain, *History*
Elizabeth Crawford McIntosh‡, *Psychology*
Craig Kenric McJett, *Political Science*
Kristan Helen McKinsey**, *Art History*
Adrian Iver Merryman, *Economics & Political Science*
Jacob E. Meskin, *Philosophy*
Philip Avedis Metzidakis, *Religion*
Margaret DeWitt Miller, *Biology*
Eben Moglen, *History*

* with Concentration in Black Studies.
** with Concentration in Asian Studies.
‡ Secondary School Teaching Certificate.

Julie Kay Mueller, *Special Major: Political Philosophy*
Roberta Lynn Mueller, *Latin*
Nathan Hale Mull IV, *Biology & Chemistry*
David Christopher Heath Mundy, *German*
Robert Sidney Neufeld, *English Literature*
David Lee Newcomer, *Economics*
David Caryl Newitt, *Physics*
Ida Oberman, *History*
Andrea Osgood, *Biology*
Carol L. Osler, *Economics*
Martin Frederic Packer, *Mathematics*
Gregg A. Parker‡, *History*
Lori Alida Patton, *Psychology*
Katherine Ellen Pearce, *Economics*
Douglas Demaree Perkins, *Psychology*
Heather Elizabeth Perry, *Biology*
Marian Petre, *Special Major: Psycholinguistics*
Thaddeus Allen Piotrowski, *Biology*
Elizabeth Burbridge Place‡, *Political Science*
Geoffrey Plank, *English Literature*
Ellyn Fern Plato, *Psychology*
Mary Elizabeth Plough, *Psychology*
Clara Amanda Pope, *History*
Thomas Bliss Stillman Quarles, Jr., *History*
Daniel Philip Rask, *Special Major: Linguistics & German*
Elizabeth Gray Raymond, *Biology*
Abigail Williams Reifsnyder, *English Literature*
Gerard Thomas Riley, *Economics*
Shanti Marie Rivera, *History*
Valerie Lynn Robertson, *Sociology & Anthropology*
Ben Wallace Rockefeller, *Economics*
Richard Browning Rogers, Jr., *French*
Gay Heidi Rosa, *Special Major: Psychology & Biology*
Brandon Ross, *Psychology*
Carol Anne Rothstein, *English Literature*
Rachel Rue, *Philosophy*
Robert Olts Russ, *Biology*
Emily Joan Sack, *History*
Steven Miller Schall, *Sociology & Anthropology*
Barry Martin Schkolnick, *Political Science*
Anne Elizabeth Schless‡, *English Literature*
Anne Schuchat, *Philosophy*
Roy Ephraim Schutzengel, *Chemistry*
Herman Mark Schwartz, *Political Science*
Radwan Ali Shaban, *Economics*
David Edward Sharp, *Economics & Political Science*
Suzanne Stacy Sheppe, *English Literature*
Mehmet Kaya Sila, *Biology*
Gary Isadore Silverman, *Political Science*
Karen Georgianna Simmons†, *History*
Karen Elayne Simms, *Biology*
Anne L. Singletary, *Sociology & Anthropology*
Richard Gerard Robert Slattery, *Political Science*
Charles Frederick Smith, *Biology*
David Richard Snyder, *Economics*
Robin Stanton, *Biology*
Sandra Leigh Sterba, *History*
Jeanne Marguerite Stewart, *Philosophy*
Jaine Strauss, *English Literature*
Karen Barbara Strier, *Special Major: Anthropology & Biology*
Christianna Lenore Strohbeck, *Chemistry*
Elizabeth Ann Strom, *History*
Richard Granville Summers, Jr., *Chemistry*
Ellen Marie Sutherland, *Chemistry*
Bernita Clare Taylor, *Biology*
Mark Samuel Taylor‡, *Political Science*
Patrice Jacklyn Thoman, *Chemistry*
Margaret L. Thomas, *Economics & Psychology*
Julia Tipton, *Special Major: Self and God in Western Literature*
Beulah Trey, *Psychology*
Daria Anna Trojan, *Chemistry*
Alice Elizabeth Tucker, *Chemistry & Biology*
Andrew Edwin Turner, *Astronomy*
Andrew Taylor Vaden, *Political Science*
Kathryn Marie Vance, *Biology*
David K. Veleta, *Philosophy*
Ann Louise Vickers**, *Religion*
Christopher Thompson Walker, *Music*
William Christopher Walker, *Philosophy*
Julia Caroline Walworth, *Medieval Studies*
Camella Gail Ward, *Psychology*
Philip Francis Weber, *History & Political Science*
Susanne M. Weil, *English Literature & Psychology*
Rachel Marian Weinberger, *Art History*
J. Paul Weinstein, *Physics*
Melanie Kuhlman Wentz, *Sociology & Anthropology*
Alan Evan Wessel, *Mathematics*

** with Concentration in Asian Studies.
† As of the Class of 1972.
‡ Secondary School Teaching Certificate.

Maura Francesca Whelan, *English Literature*
Gary Robert White, *Psychology*
Scott N. White†, *Psychology*
Terry Lee White, *Sociology & Anthropology*
Cecile Whitting, *Art History*
Kurt Wihl, *Philosophy & History*
Joyce Darnell Wilson, *Psychology*
Peter Blanchard Wilson, *Biology*
Deborah Lynn Wood, *Sociology & Anthropology*
Michael Hemsley Wood, *Physics*
Joseph Yeboah-Mensah, *Mathematics*
Jennifer J. Zimmerman, *Philosophy*

BACHELOR OF SCIENCE

Peter Henry Barschall, *Engineering*
Glenn Milton Beheim, *Engineering*
Gregory Charles Berlin, *Engineering*
Edgard Francis Bertaut, Jr., *Engineering*
Carol Margaret Cheever, *Engineering*
Craig Allen Close, *Engineering*
Peter Samuel Cohan, *Engineering*
John Pierre Constantino, *Engineering*
Raymond James Ehlers, Jr., *Engineering*
Stephen J. Garrett, *Engineering*
Thomas Lindley Gilbert, *Engineering*
Man-Tung Tony Hsiao, *Engineering*
Philip James Karanian, *Engineering*
Barrett Emil Koster, *Engineering*
Christopher Hume Lamb, *Engineering*
Wing Keung Leung, *Engineering*
James Robert Lindquist, *Engineering*
Ed Mellinger, *Engineering*
Mark H. Michels, *Engineering*
Dirk A. Schoonmaker, *Engineering*
Radwan Ali Shaban, *Engineering*
Neil David Yelsey, *Engineering*

MASTER OF ARTS

Robert Radford, *Psychology*

HONORARY DEGREES

Marian Wright Edelman, *Doctor of Laws*
Carl Levin, *Doctor of Laws*
J. Peter Schickele, *Doctor of Music*
Renoo Suvarnsit, *Doctor of Laws*
James Tobin, *Doctor of Laws*

† Secondary School Teaching Certificate

Awards and Distinctions

May 26, 1980

HONORS AWARDED BY THE VISITING EXAMINERS — 17 MAY 1980

HIGHEST HONORS:
Jordan Eth, Carl Fristrom, Shanti Rivera, Anne Schuchat, Radwan Shaban.

HIGH HONORS:
Alan Bednarski, Marian Bock, John Browning, Gene Burns, Robert Cannon, Donna Crystal, Eric Eichenwald, Martin Fleisher, Marc Freedman, Robert Gurwitt, Laurent Guy, Timothy Hofmeister, David Kennedy, Michael Kuehlwein, Thomas Long, Bruce Maxwell, Eben Moglen, Roberta Mueller, Clara Pope, Carol Rothstein, Rachel Rue, Emily Sack, Richard Slattery, Ellen Sutherland, Julia Walworth, Paul Weinstein.

HONORS:
Nancy Banks, Ruth Bardon, Margaret Barroll, Saralyn Bass, Mary Battenfeld, Richard Brunell, Wei Wei Chiu, Michael Chodos, David Chow, James Coe, Catherine Cook, Eric Corngold, David Crow, Carol Cutkosky, Frederick Daly, Lisa Diaz, Ben Fields, Carol Friesen, Steven Froehlich, Barbara Gandek, Robert Herman, Keiichi Homma, Jenny Hourihan, Melanie Ingalls, Mary Kennedy, Todd LaPorte, Christopher Laszlo, Max Leuchter, Andrea Libresco, Jairam Lingappa, Charles McGovern, Jacob Meskin, Robert Neufeld, Ida Oberman, Martin Packer, Geoffrey Plank, Thomas Quarles, Barry Schkolnick, Jaine Strauss, Elizabeth Strom, Richard Summers, W. Chris Walker, Alan Wessel, Maura Whelan, Deborah Wood, Michael Wood, Jennifer Zimmerman.

DISTINCTIONS IN COURSE AWARDED BY FACULTY

Eric Martin Ball, Blair David Boatwright, Carol Margaret Cheever, Carol Cornsweet, Michelle Ann Fineblum, Ira Adam Gitlin, Amy Anne Halio, Jane Elizabeth Halsema, Lisa Jane Heller, Man-Tung Tony Hsiao, Eric Edward Ingbar, Charles Stanley Kaplan, Janice Klunder, Barrett Emil Koster, Caroline Paula Kurtz, Cecilia Lee, Wing Keung Leung, Daniel Levitt, Anne Maureen McGuire, Margaret DeWitt Miller, Nathan Hale Mull IV, David Caryl Newitt, Mary Elizabeth Plough, Elizabeth Gray Raymond, Herman Mark Schwartz, Radwan Ali Shaban, Suzanne Stacey Sheppe, Mark Samuel Taylor, Julia Tipton, Alice Elizabeth Tucker, David K. Veleta.

ELECTIONS TO HONORARY SOCIETIES

PHI BETA KAPPA:
Eric Martin Ball, Ruth Ellen Bardon, Blair David Boatwright, John Clarke Browning, Richard Mark Brunell, Carol Margaret Cheever, Michael Adam Chodos, Eric Owen Corngold, Carol Cornsweet, David Alexander Crow, Eric Christopher Eichenwald, Jordan Eth, Martin E. Fleisher, Carl Chandler Fristrom, Robert Edwin Gurwitt, Amy Anne Halio, Jane Elizabeth Halsema, Man-Tung Tony Hsiao, Charles Stanley Kaplan, Janice Klunder, Barrett Emil Koster, Michael Karl Kuehlwein, Caroline Paula Kurtz, Wing Keung Leung, Daniel Levitt, Thomas John Long, Bruce Stewart Maxwell, Eben Moglen, Nathan Hale Mull IV, David Caryl Newitt, Geoffrey Plank, Clara Amanda Pope, Elizabeth Gray Raymond, Shanti Marie Rivera, Rachel Rue, Anne Schuchat, Radwan Ali Shaban, Jaine Strauss, Richard Granville Summers, Jr., Ellen Marie Sutherland, Julia Caroline Walworth, J. Paul Weinstein, Jennifer J. Zimmerman.

SIGMA XI:
Eugene Burns, Thomas Cavin, Carol Cheever, James Coe, Carol Cornsweet, Donna Crystal, Carl Fristrom, Keiichi Homma, Man-Tung Hsiao, John Kelly IV,

Barrett Koster, Wing Keung Leung, Daniel Levitt, Jairam Lingappa, Edward Mellinger, Margaret Miller, Nathan Mull IV, David Newitt, Andrea Osgood, Martin Packer, Mary Plough, Elizabeth Raymond, Anne Schuchat, Radwan Shaban, Kaya Sila, Robin Stanton, Jaine Strauss, Karen Strier, Richard Summers, Ellen Sutherland, Andrew Turner, Paul Weinstein, Alan Wessel, Michael Wood.

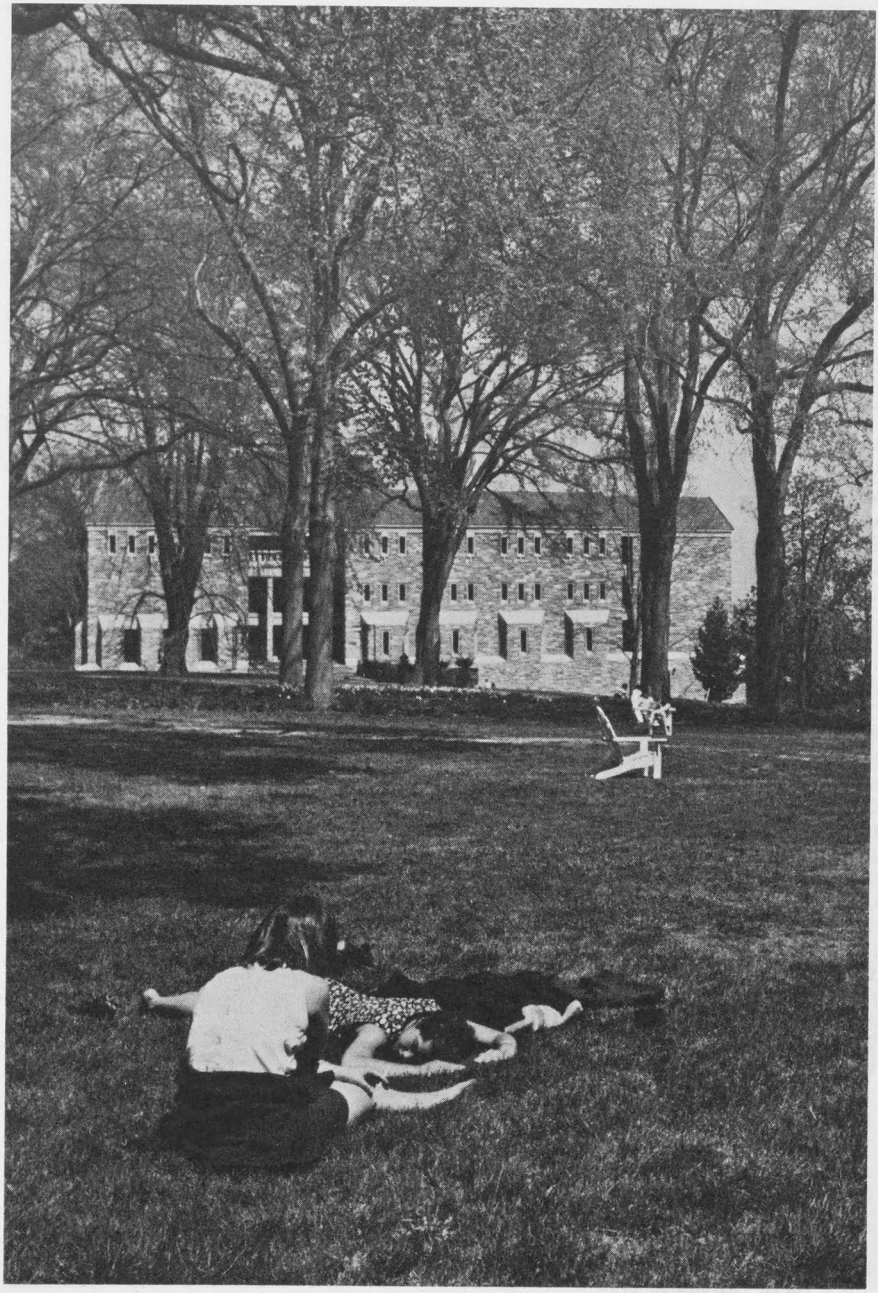
TAU BETA PI:
Glenn M. Beheim, Carol M. Cheever, Man-Tung Tony Hsiao, Wing K. Leung, Radwan A. Shaban.

SWARTHMORE COLLEGE FELLOWSHIP AWARDS

The Phi Beta Kappa Fellowship to Shanti Rivera.
The Hannah A. Leedom Fellowship to Radwan Shaban, Herman Schwartz.
The Joshua Lippincott Fellowship to Peter Schwartz '79.
The John Lockwood Memorial Fellowship to Elizabeth McKinstry '79, Brenda Perkins '79, Rachel Rue.
The Thomas M. McCabe, Jr. and Yvonne Motley McCabe Memorial Fellowship to Gabrielle D'Amato '78.
The Lucretia Mott Fellowship to Ruth Bardon, Lisa Diaz, Julia Walworth.
The Martha E. Tyson Fellowship to Jacqueline Brokaw.
The Sarah Kaighn Cooper Scholarship to Elizabeth Anderson '81.

SPECIAL AWARDS

The Ivy Award to Robert Herman.
The Oak Leaf Award to Clara Pope.
The McCabe Engineering Award to Radwan A. Shaban.
The Brand Blanshard Prize to Julie-Kay Mueller.
The A. Edward Newton Library Prize to David Bolton, Addison Lee, Thomas Kanwit/Alexander Troy.
The Lois Morrell Poetry Prize to Elizabeth Cole.
The John Russell Hayes Poetry Prize: Valerie Cornell, Johanna Prins.
The William Plumer Potter Short Story Prize to Helen Perivier, Alvin Holt, Neal Epstein.
The Philip M. Hicks Prizes for Literary Criticism to Valerie Cornell, Elizabeth Mackie.
The Alice L. Crossley Prize in Asian Studies to Kristan McKinsey.
The Dorothy Ditter Gondos Award to Jennifer Pap.



Enrollment Statistics

ENROLLMENT OF STUDENTS BY CLASES 1979-80

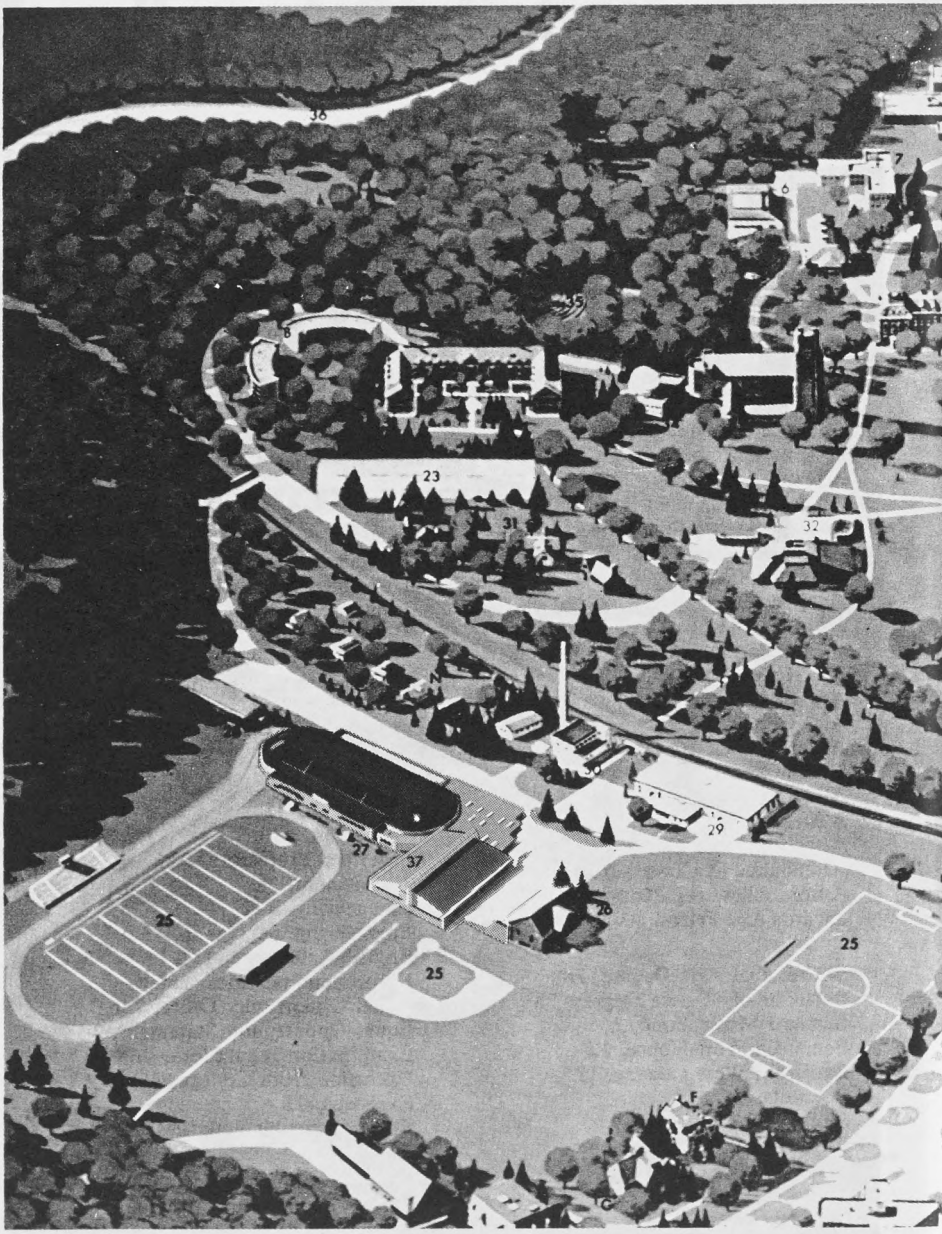
	MEN	WOMEN	TOTAL
Seniors	161	133	294
Juniors	162	127	289
Sophomores	203	138	341
Freshmen	190	173	363
	716	571	1287
Graduate Students	1	0	1
Special Students	10	16	26
TOTALS	727	587	1314 *

GEOGRAPHICAL DISTRIBUTION OF STUDENTS 1979-80

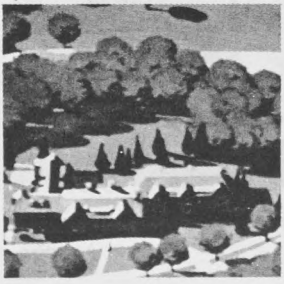
Pennsylvania	276	New Hampshire	6	Malaysia	4
New York	212	Tennessee	6	West Germany	4
New Jersey	136	Arizona	5	France	3
Maryland	87	Kansas	5	Lebanon	3
California	65	Louisiana	5	Greece	2
Massachusetts	55	Oklahoma	5	Iran	2
Connecticut	52	Rhode Island	5	Netherlands	2
Ohio	36	Iowa	4	United Kingdom	2
Delaware	34	South Carolina	4	Switzerland	2
Virginia	34	Hawaii	3	Bangladesh	1
Illinois	33	Kentucky	3	Barbados	1
District of Columbia	27	Utah	3	Belgium	1
Texas	19	Alabama	2	Bolivia	1
North Carolina	11	Alaska	1	Colombia	1
Maine	10	Idaho	1	Indonesia	1
Oregon	10	Mississippi	1	Egypt	1
Indiana	9	Nevada	1	Jordan	1
Michigan	9	Virgin Islands	1	Libya	1
Missouri	9	West Virginia	1	Nigeria	1
Colorado	8	Total U.S.A.	1246	Peru	1
Minnesota	8			Rumania	1
New Mexico	8	Canada	7	Saudi Arabia	1
Washington	8	Hong Kong	5	Total from Abroad	61
Florida	7	Ghana	4	GRAND TOTAL	1307 **
Georgia	7	Italy	4		
Vermont	7	Japan	4		
Wisconsin	7				

* As of September, 1979
** As of November, 1979

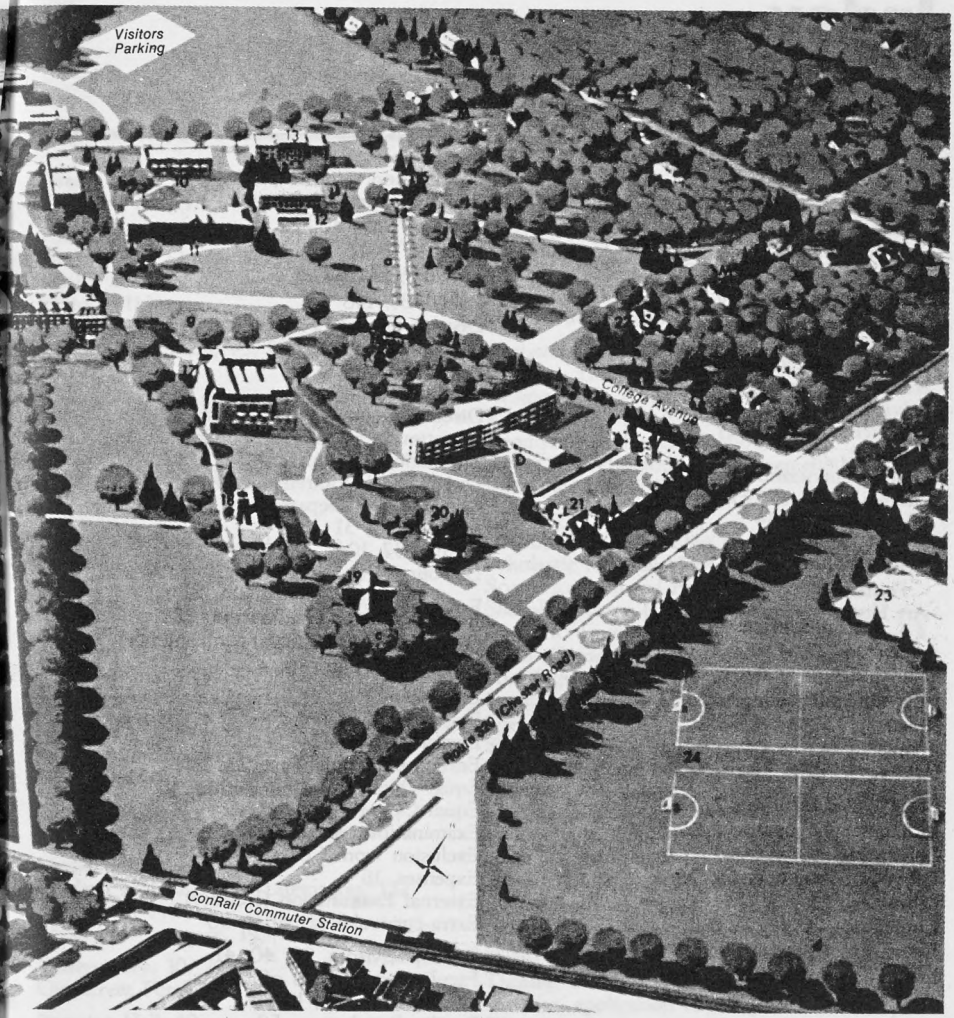

GOING SOUTH
for Thanksgiving?
I'd appreciate a ride to North Carolina. Will share driving and expenses, no luggage.
Melissa Bush x481
CARLISLE PA
I WANT A RIDE
TO NEW HAVEN
OR
PRINCETON
FRIDAY NIGHT-SAT. AM
NOV. 18-19
James Beechwood x228
HELP!
New York
this Saturday & can take a cheerfully paying passenger call:
IRAGITLIN
Oberlin
Or anywhere thereabouts
For Thanksgiving break.
Will share driving; Expenses
Margi Cohen x469
Peggy Carroll x373
RIDE WANTED
Bucknell
Boston
RIDE WANTED
to CLEVELAND
over Thanksgiving
Call Mad Hinch
CH- 361
BOSTON
at any portion of the way
(e.g. Mad Hanks, Rockford, Logan Airport). Call me First!
I DESPERATELY NEED A RIDE
CHICAGO
for Thanksgiving vacation, Nov. 18
I'll be glad to share any exp
Call Melanie at ext. 374
I NEED A RIDE BA
TO SMORE on Sun, No
From Rye, NY or Somew
Will pay my share of
take turns driving. PLEASE
Jennifer Zimmerman
ride want
to
RICHMO
or
WILLIAMSBU
or
NORFOLK
if heading to
points in VA
Thanksgiving Break
contact DEB GALE
NEEDED TO:
Buf
WILL SHARE DRI



Mary Lyon Buildings, located 2 blocks off campus.



Swarthmore College Campus



Key to the Map

1. Parrish Hall and Annex
   Wilcox Gallery
2. Admissions Office
3. Scott Foundation Building
   [Relief Map of Campus]
4. Hall Gymnasium
5. Sharples Swimming Pool
6. Lang Music Building
7. Martin Biological Laboratory and
   Animal Laboratory
8. Du Pont Science Building
9. Beardsley Hall
10. Hicks Hall
11. Trotter Hall
12. Arts Center
    Pearson Theatre
13. Papazian Hall
14. Friends Meeting House
15. Whittier House
16. Scott Horticultural Foundation Office
    a. Lilac collection
    b. Peony collection
    c. Magnolias
    d. Crabapples
    e. Pinetum
    f. Rhododendrons and azaleas
    g. Dean Bond Rose Garden
    h. Scott Foundation Nursery and
       Frorer Holly Collection
17. McCabe Library
18. Tarble Social Center
19. Worth Health Center
20. Benjamin West House
21. Bond Memorial and Lodges
22. Robinson House
    — Black Cultural Center
23. Tennis Courts
24. Cunningham Field
25. Clothier Fields
26. Barn
27. Lamb-Miller Field House
28. Squash Courts
29. Service Building
30. Heating Plant
31. Fraternity Lodges
32. Sharples Dining Hall
33. Clothier Memorial
34. Sproul Observatory
35. Scott Outdoor Auditorium
36. Crum Creek
37. Physical Activities Building

Dormitories and Residences

A. Dana Dormitory
B. Hallowell Dormitory
C. Wharton Hall
D. Willets Dormitory
E. Worth Dormitory
F. Palmer Hall
G. Pittenger Hall
H. Roberts Hall
J. Mary Lyon Buildings
K. Ashton House
L. Woolman House
M. Professors' Houses
N. Employees' Houses
O. Cunningham House
P. President's House

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Notes

Notes

Directions for Reaching Swarthmore College

The College is readily accessible from Philadelphia by train. Amtrak trains from New York and Washington arrive hourly at Philadelphia's 30th Street Station. From 30th Street Station, the ConRail Media Local takes 21 minutes to reach the campus.

Motorists from the north and from the west leave the Pennsylvania Turnpike at Exit 24 (Valley Forge) and from the toll booth travel approximately two miles on I-76 to the Gulph Mills exit, then follow Route 320 South approximately 14.5 miles to College Avenue; turn right onto College Avenue and proceed two blocks to Parrish Hall.

Motorists from the south leave I-95 at Chester, Pa. (PA 320 — PA 352 — Edgmont Ave. Exit); follow Route 320 north approximately 3 miles to College Avenue; turn left onto College Avenue and proceed two blocks to Parrish Hall.

Motorists from central New Jersey should use Walt Whitman Bridge. After crossing the bridge, follow signs for I-95 South. Pass the Philadelphia International Airport and continue following I-95 (ongoing highway construction) to Route 320 (Chester Business District Exit). Turn right onto Route 320 North and follow approximately 3 miles to College Avenue. Turn left onto College Avenue and proceed two blocks to Parrish Hall.

There is no direct public transportation from Philadelphia International Airport to the College. Taxi fare from the Airport to the College is approximately twelve dollars.