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Ursinus College Catalog for the One Hundred and Seventeenth Academic Year, 1986-1987

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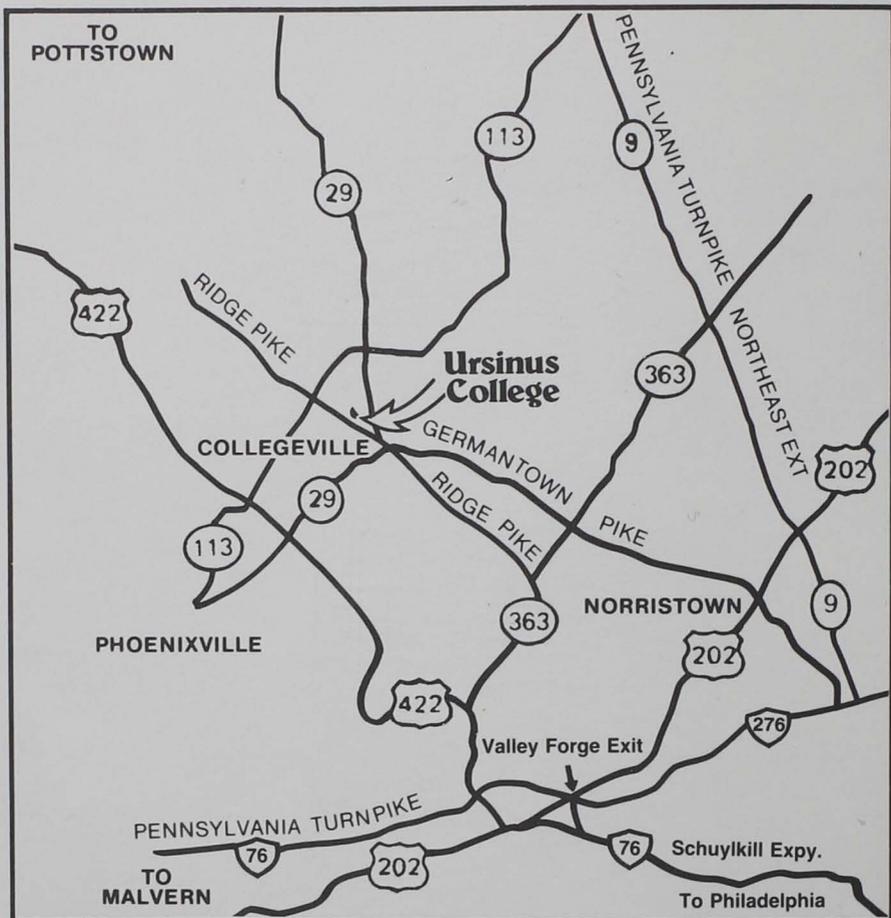
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1986-87

Ursinus College
Catalog



Collegeville
Pennsylvania



Ursinus College is located in Collegeville, a borough in Montgomery County, Pennsylvania, 25 miles northwest of Philadelphia and just a few miles from the Norristown and Valley Forge exits of the Pennsylvania Turnpike.

VOLUME LXXXIV

JANUARY 1986

URSINUS COLLEGE CATALOG

Published by Ursinus College, Collegeville, Pa. 19426,
 Telephone (215) 489-4111.



Ursinus College **1986 - 87**

For The
ONE HUNDRED AND SEVENTEENTH ACADEMIC YEAR

COLLEGEVILLE, PA 19426
JANUARY 1986

COMMUNICATIONS WITH URSINUS COLLEGE

Communications with the College should be addressed to the appropriate administrative officer.

Academic and Faculty Affairs

William E. Akin, Dean of the College

Academic Standing of Students and Requests for Transcripts

Barbara Boris, Registrar

Admissions

Lorraine Zimmer, Director of Admissions

Alumni Affairs

Mary Ellen DeWane, Director of Alumni Affairs

Career Planning and Placement

Carla M. Rinde, Director of Career Planning and Placement

Evening School

C. Joseph Nace, Director of Ursinus College Evening School

Financial Aid and Student Employment

Eva Hess, Director of Financial Aid

General College Matters

Richard P. Richter, President

Gifts to the College

John R. Van Ness, Vice President for College Relations

Payment of Bills

Nelson M. Williams, Vice President for Business Affairs

Publicity, Publications, Communications

Debra Kamens, Director of College Communications

Student Life

J. Houghton Kane, Dean of Student Life

Summer School

Peter F. Small, Assistant Dean of the College

Correspondence should be directed to the appropriate administrative officer. The mailing address is Ursinus College, Collegetown, Pennsylvania 19426.

The College telephone number is (215) 489-4111.

Visitors to the College are welcome. Student guides are available when the College is in session. The office of admissions is located in Corson Hall. Applicants for admission should call or write for an appointment.

Directions and maps to Collegetown are found on the inside front cover of the catalog.

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The mission of Ursinus College is to develop independent and responsible individuals who are prepared for a creative and productive role in a changing world through a program of liberal education.



THIS IS URSINUS

THE COLLEGE IN BRIEF

Ursinus College is an independent, four-year liberal arts college with a tradition of academic excellence reaching back 117 years. It has about 1,175 students, almost equally divided between men and women. Almost 1,000 students are residents in College dormitories. The others live at home and commute from surrounding areas.

Under a curricular program beginning in September 1979, all students undergo a lively process of general education, while concentrating in one of 18 major fields. They also have an opportunity to take minor concentrations in areas outside their majors to allow for career options or for greater intellectual breadth or depth.

Seventy percent of the members of the teaching faculty hold doctoral degrees. Faculty members, who engage in research, are committed first to teaching. Learning takes place in a friendly but challenging environment.

While the campus of some 140 acres lies beyond the Philadelphia metropolitan area, it is less than an hour from central Philadelphia by high-speed expressway.

A high percentage of Ursinus students enter graduate and professional schools. Alumni are leaders in civic and cultural life, and they are found in key positions in industry and the professions. Wherever they are, they bring a special attitude toward life, at once critical and creative, that marks them as Ursinus men and women.

Ursinus College is related to the United Church of Christ and has been church-related since its founding in 1869. The College was established by pastors and laymen of the German Reformed Church, later known as the Reformed Church in the United States, from 1934 to 1957 known as the Evangelical and Reformed Church, and since 1957 known as the United Church of Christ.

HOW URSINUS BEGAN

The beginning of educational work on what is now the campus of Ursinus College dates back to the construction two centuries ago of a primitive log schoolhouse. The ancient building was razed in 1832 when Todd's School was built in the town of Perkiomen Bridge, now Collegeville. In 1848 Free-land Seminary was opened on a tract adjacent to Todd's School. During the following two decades many hundreds of young men were educated there.

In 1867 a group of men, members of the German Reformed Church, actuated by a desire to serve the interests of higher education and of evangelical Christian religion, laid plans to establish a college where, to quote

their words, young men could be "liberally educated under the benign influence of Christianity." They chose as the name of the College that of the distinguished 16th-century scholar and reformer, Zacharias Ursinus of the University of Heidelberg, Germany. In 1869 the College was granted a charter by the Legislature of Pennsylvania. The buildings of Freeland Seminary were bought, and instruction was begun on September 6, 1870. Women were admitted to the College for the first time in 1881.

Coincident with the founding of the College was the establishment of a preparatory department as a successor to Freeland Seminary. The preparatory school was called Ursinus Academy and was operated as such until 1910, when it was discontinued.

COLLEGE PRINCIPLES AND MISSION

Ursinus College is an independent, coeducational, liberal arts college which seeks to help the student to understand and to emulate excellence in scholarship and in conduct. Although in recent decades the College has extended its work to include the preparation of men and women for a variety of professions, the College continues to emphasize the fact that however varied and specialized the changing needs of the day, the fundamental needs of man remain constant. All students, regardless of major, are required to study a core of subjects considered essential for a liberally educated person.

The mission of Ursinus College is to develop independent and responsible individuals who are prepared for a creative and productive role in a changing world through a program of liberal education that cultivates the following:

- (1) Familiarity with subject matter and methods of the major divisions of learning, combined with intensive knowledge of at least one major discipline;
- (2) A facility for making independent and responsible value judgments;
- (3) A spirit of inquiry and intellectual flexibility;
- (4) Critical, logical and imaginative thinking;
- (5) A heightened understanding of human nature, enlarged by compassion and moral obligation;
- (6) Ideals of morality and service consonant with the Christian character;
- (7) A comprehension of our natural and social environment and our cultural heritage; and
- (8) A sense of sharing in a community enterprise.

Ursinus College, in conformance with its own founding charter and with applicable legislation, does not practice discrimination on the basis of sex, race, religion, color, creed, national origin or handicap in such matters as admissions, educational programs or activities, housing, financial aid, employment or employee benefits. Please refer to page 159 for further details.

Students at Ursinus share the freedom of inquiry and the respect for the individual which are at the heart of a good liberal education. They also share the responsibility for maintaining the order and civility needed for learning and for personal growth. The College expects that when students decide to enroll they will abide by all the rules of the College. Should students find that they cannot willingly obey the rules, the College expects that they will wish to withdraw. The Dean's Office will assist any such students in good standing in transferring to a college of their choice.

The College reserves the right, through its established procedures, to modify the requirements for admission and graduation; to change the arrangement or content of courses, the texts and other materials used, the tuition and other fees; to alter any regulation affecting the student body; to refuse admission or readmission to any student at any time, or to require the withdrawal of any student at any time, should it be deemed in the interest of the College or of the student.

Ursinus College is a member of the National Association of College Admissions Counselors and subscribes to its Statement of Principles of Good Practice.

CULTURAL ENVIRONMENT

Students at Ursinus have the advantages of living in a small town. At the same time they are close enough to New York and Philadelphia to see plays and operas, to hear some of the greatest symphonic music in the world, to visit museums and historical sites, and to observe the urban scene at its liveliest.

Ursinus is located a few miles from Valley Forge, in the heart of a region which is rich in historical tradition. In Colonial days, this region was a center of the cultural and political development of America.

ACCREDITATION

Ursinus is a member of the Association of American Colleges and is on the approved list of the Middle States Association of Colleges and Schools, the American Association of University Women, the American Chemical Society, and has been given program approval by the Department of Education of the Commonwealth of Pennsylvania for the certification of teachers.

THE COLLEGE YEAR

The College year consists of two semesters of fifteen weeks each and a summer session of twelve weeks. Students are admitted to the College at the beginning of either semester or at the beginning of the summer session. Those who wish to accelerate their college programs may attend the summer session in addition to the fall and spring semesters. The summer session is available to all students who wish to take advantage of it.

COLLEGE ADVANCEMENT

On Nov. 1, 1985, Ursinus launched a five-year development program, The Campaign for Ursinus College, to continue to strengthen the College's resources. The campaign is seeking \$20 million for faculty endowment, scholarship endowment, improvements to the physical plant, support of annual operations, and for future interests. At the close of 1985, the campaign had raised over \$7 million dollars in gifts and pledges. In recent years, two other campaigns were successfully conducted, The Century II Program (1970-1975) and The Advance Ursinus 76/80 Program. The College generally has enjoyed strong financial support over the years from the members of the Board of Directors, alumni, and friends, which has contributed greatly to the College's success.



STUDENT LIFE ON CAMPUS

Ursinus gives great emphasis to the quality of student life for both resident and commuting students. Our objective is to help each student grow in independence and responsibility. Students are encouraged to take an active role in the life of the campus community. They have many opportunities to contribute to group decisions, to practice leadership, to sort out their own priorities and make personal choices. As a part of the regular campus planning process, policies affecting student life are under continuous review with the goal of furthering the educational effectiveness of residence hall life, social activities, counseling and advising.

The student life program is administered by the Office of Student Life. It includes offices dealing with career planning and placement, counseling, financial aid, health services, student activities/college union, and residential life.

COLLEGE UNION

The College Union, located in the former library building, is a major social center on campus, providing many services and activities. It includes a snack bar, game room, television lounges, and the Student Activities Office. It also houses various student organizations, including the all-student Campus Activities Board which sponsors a wide variety of social and recreational activities throughout the year.

RELIGIOUS LIFE

Voluntary worship services and other religious programs are held on the campus under the supervision of the campus minister of the College. Student religious life centers in the Meditation Chapel, a convenient meeting place for worship and social gatherings in Bomberger Hall. A number of student-led religious organizations, representing a wide range of beliefs, are active on the campus.

Students are encouraged to participate in the life of a Colledgeville-area congregation of their own choice.

MEDICAL SERVICE

Resident students are entitled to ordinary medical care for minor accidents and ailments contracted while enrolled at the College. All care for the sick is under the direction of the College physicians and their decisions concerning the disposition of cases are final. The College reserves the right to enforce quarantine, and to require the removal from the campus of students who require extraordinary care. Transportation to home or hospital is the student's responsibility. College physicians will consult with students in the Health Center during regular office hours.

Students requiring allergy injections must present a signed permission slip from their personal physician and from their parents. A charge of \$1.00 will be made for each allergy injection administered by Health Center personnel. Only medication prescribed by licensed physicians will be administered.

Students are responsible for the cost of laboratory tests, x-rays and prescription medications not carried by the College.

Regular hours are from 8:00 A.M. to 4:00 P.M. on weekdays. Nurses are available for emergency care 24 hours a day. Except for extreme emergencies the student seeking medical attention is responsible for reporting to the Health Center for treatment. When emergency treatment is required, the College will make every effort to provide it. The cost of treatment by physicians and nurses not on the College staff is to be borne by the student.

ROOM AND MEALS

In order to fulfill its mission, Ursinus requires that all students who do not live in their own homes reside in college dormitories and take their meals in the College Dining Hall.

The College Dining Hall is located in Wismer Hall. The College meal plan serves students three meals a day during the academic year.

ATHLETICS

Ursinus recognizes the physical, social, and moral benefit derived from athletic activity and accordingly offers a well-balanced sports program open to all. Men's intercollegiate competition takes place in varsity and junior varsity football, basketball, soccer, wrestling (varsity only), swimming, cross country, golf, baseball (varsity only), track and tennis. In addition to this program, intramural games are played. Intramural athletics for men include touch football, basketball, volleyball, wrestling, softball, water polo, track and tennis. Club programs are sponsored in indoor track, lacrosse, fencing, and karate.

For women students, the College supports intercollegiate competition in varsity and junior varsity hockey, basketball, softball, tennis, swimming, lacrosse, badminton, gymnastics, volleyball, cross country and track (varsity only). The intramural program provides additional recreational opportunities in tennis and water polo with inter-dorm competition in volleyball and table tennis. Club programs are sponsored in dancing, bicycling and sailing.

The College is a member of the Middle Atlantic Conference, the Centennial Football Conference; the Pennsylvania Association for Intercollegiate Athletics for Women; the Eastern Association for Intercollegiate Athletics for Women; and the National Collegiate Athletic Association. These organizations govern the conduct of Intercollegiate Athletics at member institutions.

ORGANIZATIONS

Students find many opportunities for education and enjoyment through a large number of organizations. All are approved by the faculty and are supervised by the Student Activities Committee and the Office of Student Life. In addition, members of the faculty serve these groups as advisers. The Ursinus Student Government Association has the principal responsibility for

student participation in the planning and administration of student life. Members of this organization are elected by the student body and are advised by a member of the Office of Student Life.

Numerous religious and social activities are planned and sponsored by religious groups under the direction of student leaders as well as by the administration of the campus minister.

Other organizations stimulate the interest of students in particular areas of study or in future occupations. Among them are the Brownback-Anders Pre-Medical Society, the Beardwood Chemical Society, the Biology Club, the Society of Physics Students, the Spanish Club, the Haines-Barnard Pre-Legal Society, the G. Leslie Omwake Education Club, the Socratic Club, the Psychology Club and the Economics Club. Interest in athletics and campus spirit is fostered by the Women's Athletic Association and the Spirit Committee. There are the following national honor societies: Beta Beta Beta, the Biological Honor Society, which stimulates interest, scholarly attainment and investigation in the biological sciences and promotes information and interpretation among students of the life sciences; Sigma Pi Sigma, the national physics honor society, which is affiliated with the American Institute of Physics and the Association of College Honor Societies; Omicron Delta Epsilon, the international honor society in Economics; Pi Gamma Mu, the national social sciences honorary society, which offers scholastic recognition to outstanding junior and senior students; and Psi Chi, the national honor society in psychology, and an affiliate of the American Psychological Association and the Association of College Honor Societies. Outstanding junior men may be elected to Cub and Key and junior women to the Whitians.

A large and varied program of dramatics is sponsored and carried out by proTheatre, which presents two major productions a year, in addition to various group productions. There is an Ursinus chapter of Alpha Psi Omega, a national honorary dramatics fraternity.

Music plays a large part in the life of Ursinus. A faculty member in the music department advises the student musical organizations and provides professional musical leadership. The Meistersingers chorus offers concerts on and off campus, including a one-week tour each year. The Ursinus College Choir offers a wide variety of literature, from modern to major classical works. Its annual presentation of Handel's Messiah is a highlight of the year in music on campus. The music department also provides opportunities for instrumental performance—the Pep Band, the Chamber Orchestra and the Jazz Band.

A chapter of Pi Nu Epsilon, the national honorary music fraternity, is active on the Ursinus campus.

Separate from the College's official music program, other volunteer music groups afford students and others opportunities for involvement in music.

There are numerous social organizations on the Ursinus campus. The fraternities are Sigma Rho Lambda, Alpha Phi Epsilon, Delta Mu Sigma, Pi Omega Delta, Beta Sigma Lambda, Delta Pi Sigma, Zeta Chi, and Alpha Phi Omega, the national service fraternity. The sororities are Omega Chi, Alpha Sigma Nu, Kappa Delta Kappa, Phi Alpha Psi, and Tau Sigma Gamma.

STUDENT COMMUNICATIONS

The Grizzly is the Ursinus newspaper. It is managed by a publications committee consisting of student and faculty representatives and is edited and written entirely by the students. The editor-in-chief, the associate editors, and the business manager are elected by the committee on the basis of merit and the staff is selected by the editors on the same basis. The paper is of interest to students and alumni as a record of life at Ursinus.

The Lantern serves as an outlet for those interested in creative writing and art. It is written and edited by an all-student staff under the direction of a faculty adviser. It is published twice a year.

The Ruby, the Ursinus yearbook, is published by an all-student staff each year. It is a volume presenting an intimate pictorial account of the year's activities, not only of the senior class, but of the entire College.

The *Ursinus College Bulletin*, official alumni magazine of the College, appears five times a year and includes the annual report of officers.

WVOU, the campus radio station, is designed to present a varied agenda of music, from classical to rock, and campus and world news.

THE CAMPUS SETTING

A major building program, undertaken to celebrate the centennial of the College, in recent years transformed the Ursinus campus into a modern and highly attractive setting for liberal education.

Wisner Hall, completed in 1965, is one of the chief points of activity on campus. It contains the student Dining Hall, a lounge, lecture hall, language laboratory, a number of classrooms and seminar rooms. The building led in 1966 to a citation for excellence from the Pennsylvania Society of the American Institute of Architects. It is named for the late Ralph F. Wisner, '05, former treasurer of the College and member of the Board of Directors.

Bomberger Memorial Hall, built in 1891, provides classrooms for many courses in the humanities, languages and social sciences. It also houses the College chapel, study and recreation areas. This Romanesque hall, made of Pennsylvania blue marble, is named for the first President of Ursinus, Dr. J. H. A. Bomberger. The building was made possible by the benefactions of Robert Patterson and was completely renovated in 1972. In November 1981, the restored tower of Bomberger Hall was named Wagner Tower in honor of James E. Wagner, D.D., former president of the Evangelical & Reformed Church (1953-1961), co-president of the United Church of Christ (1957-1961), and vice president of Ursinus College (1962-1968).

Pfahler Hall of Science, built in 1932, is named in honor of Dr. George E. Pfahler, famed radiologist. It houses classrooms and laboratories for work in chemistry, physics, mathematics and geology. The building is equipped with the Elihu Thomson Memorial Telescope for astronomical observation in the Walter W. Marsteller Memorial Observatory. The development plan of the College brought extensive renovation of the building in 1971, and the expansion of chemistry, mathematics and physics departments into areas formerly occupied by psychology and biology, now located in the Life Science Building.

The Life Science Building opened for use in September 1970. Along with the Myrin Library and the physical education building, completed in 1972, it was financed by a special All-Ursinus Anniversary Drive that coincided with the College's 100th year. As the new home of the psychology department and of the biology department, it complements Pfahler Hall of Science. Both departments have been enabled to improve laboratory work in regular courses and to offer better opportunities for independent student research. It is the new home of the following endowed laboratories: Levi Jay Hammond Laboratory of Comparative Anatomy, the W. Wayne Babcock Laboratory of General Biology, the Anna Heiny Schellhamer Laboratory.

The Myrin Library, located at the center of the campus, is designed to support the liberal arts program of the College, as well as research and independent study. The open-stack structure houses more than 160,000 volumes, 125,000 microforms, 20,000 audiovisual materials, and 725 current periodical subscriptions. It is also a selective depository for U.S. Government documents and Pennsylvania documents.

Study facilities for 500 persons are provided in carrels, seminar rooms, private study rooms, and lounges. During the academic year the library is open 100 hours per week. Media Services, the Curriculum Materials Center, the Pennsylvania German Studies Archive, and the Ursinusiana Collection also are located in the Library.

An experienced staff of librarians provides reference and information service 55 hours per week to assist students and faculty in the use and interpretation of library collections. An ongoing program of library orientation and instruction, in cooperation with the academic departments, is designed to familiarize students with research materials and appropriate search strategies. Direct access to over 6 million volumes is available through the Tri-State Library Cooperative. Over 500 online databases are available for computerized literature searches in all academic disciplines.

Two terminals connected to the Online Computer Library Center's bibliographic network provide worldwide access to 6,000 research collections and over 11 million volumes. The Interlibrary Delivery Service of Pennsylvania supports interlibrary loan functions.

The Ursinus College Computer Center and Microcomputer Lab are also located in the Myrin Library. See page 13.

Corson Hall, the Administration Building, named in honor of the late Philip L. Corson, a member of the Board of Directors, and his wife, the late Helen Payson Corson, was dedicated in the spring of 1970. Located near the main entrance to the campus, it houses the Admissions Office, where candidates for entrance to the College make application. The main administrative offices are found here.

The D. L. Helfferich Hall of Health and Physical Education and The William Elliott Pool were dedicated October 21, 1972, Founder's Day, in honor respectively of the ninth president of Ursinus College, and Dr. William Elliott, Board member, neighbor and benefactor of the College. The physical education complex serves both men and women with three full-size basketball courts, one of them a multi-purpose section; locker rooms and team rooms; wrestling room; weight room; dance studio; classrooms; a regulation collegiate-sized swimming pool; and squash and handball courts. A sculp-

ture of a bear (Ursinus' mascot), chiseled by Charles Sherman from the 200-year-old sycamore tree which stood next to the end zone of the football field, is located in the lobby.

Helfferich Hall is supplemented by the Utility Gym, located adjacent to Ritter Center and dedicated October 11, 1980. The Utility Gym is used for both athletic and social events.

The Ritter Center for the Dramatic Arts opened in the fall of 1980, housing a 260-seat theater with flexible staging, a television studio and various auxiliary rooms. It was dedicated October 4, 1980, in honor of Dr. Rolland A. Ritter, LL.D., '60, and his wife, Lullis M. Ritter. Ritter Center occupies the former Thompson-Gay Gymnasium, built in 1927. The memory of the original namesakes is specially preserved in the building. They were Robert W. Thompson, '12, and George H. Gay, '13, noted Ursinus athletes, both of whom died in their senior years at the College.

Among the outdoor athletic and recreational facilities are Price Field, Patterson Field, and Evans Field. Price Field, which includes the baseball diamond, soccer field, softball diamond and football practice fields, is named for Dr. John Price, '05, one of the great athletes in Ursinus history. Football games and track meets take place at Patterson Field, named for the College's first benefactor, Robert Patterson. The Effie Brant Evans Hockey Field is located at the east end of campus near Stauffer Hall. Eight tennis courts and an outdoor shuffle-board court are located behind Helfferich Hall.

Other structures include Super House, a residence on Main Street opposite the campus, bequeathed to the College by the late Henry W. Super, D.D., LL.D., vice president and professor of mathematics, 1870-1891, and president, 1892-1893; Sprinkle Hall, on the east campus fronting Fifth Avenue, the Student Health Center; The Eger Gateway, erected through the generosity of George P. Eger, of Reading, Pennsylvania, at the entrance of the walk leading from Main Street to Myrin Library; the statue of Zacharias Ursinus in front of Bomberger Hall, donated by Phillip and Muriel Berman and sculpted by Michael Price; The College Store; The power plant, a building put into operation in 1963; and the Marjorie T. Elliott House, 785 Main Street, former home of the late Dr. Edward Platte, College physician, now occupied by the president and his family. The house is named in memory of the late wife of William Elliott, a member of the Board of Directors.

COMPUTER FACILITIES

The Ursinus College academic computer facility consists of a large computer system and numerous microcomputers in several locations on campus. The main academic computer facility is located in the Myrin Library, where students may use either the Ursinus College VAX 11/750 or use the College's microcomputer lab. Computer use is essentially limited only by library hours. The library is open 7 days a week for a total of 100 hours.

The Ursinus VAX 11/750 is a Digital Equipment Corp. 32-bit super-minicomputer capable of handling 64 simultaneous users. The system has 6 megabytes of internal memory, two 121 megabyte Winchester disk drives, and a Floating Point Accelerator for improved speed. The system uses Digital's Virtual Memory operating System (VMS). The VAX supports BASIC, COBOL, FORTRAN, Pascal, and Prolog.

Current plans call for the installation of a second academic VAX during the summer of 1986 and the installation of a local area network throughout the campus in the near future.

RESIDENCE HALLS

Brodbeck, Curtis, and Wilkinson Halls form a building in English colonial style. Used as residences for 153 men, these halls bear the names of benefactors of the College, Andrew R. Brodbeck, Cyrus H.K. Curtis and Mr. & Mrs. Joseph C. Wilkinson.

Beardwood, Paisley and Stauffer Halls form a residence hall complex for 263 women. These halls bear the names of benefactors of the College, Hannah and Matthew Beardwood, Harry Elwood Paisley, and Rev. and Mrs. George A. Stauffer.

Reimert Complex, comprised of 31 separate suites, provides a residence for 245 students. It bears the name of Dr. William D. Reimert, president of the Board of Directors, 1961-69,

As an additional style of residential living, the College provides numerous smaller residential houses. The following houses are used as residences for students: Clamer Hall, 409 Main Street, the gift of Dr. Guillian H. Clamer; 424 and 426 Main Street; 476 Main Street; 500 Main Street; Keigwin Hall, 513 Main Street; Maples Hall, 520 Main Street; Hobson Hall, 568 Main Street; Shreiner Hall, 600 Main Street; Duryea Hall, 612 Main Street; 624 Main Street; Olevian Hall, 640 Main Street; Schaff Hall, 646 Main Street; Omwake Hall, 701 Main Street; 702 Main Street; Todd Hall, 724 Main Street; 732 Main Street; 777 Main Street; Isenberg Hall, 801 Main Street; 942 and 944 Main Street; Musser Hall, 23 Sixth Avenue; and Sturgis Hall, 26 Sixth Avenue.

SHIPMENT OF BELONGINGS

The College will accept United Parcel shipments at the Corson Hall Mail Room between the hours of 8 A.M. and 4:30 P.M., Monday through Friday, one week prior to opening date providing:

1. the mail room has been notified in writing when to expect shipment and from whom;
2. the shipment arrives prepaid.

The College can accept no responsibility for the condition of the shipment.

CAREER PLANNING AND PLACEMENT

An Ursinus education prepares students for a broad range of careers. Resources for career planning are wide and varied. They include the Career Planning and Placement Office, faculty advisers, and hundreds of alumni members of the Alumni Career Counseling Group. Career counseling begins during the freshman year, when students meet with trained faculty advisers and take part in discussions organized by the Career Planning and Placement Office, located in Studio Cottage. It continues as students for the sophomore year decide on major and minor concentrations. Placement services bring students and prospective employers together as students near graduation.

Professional clubs on campus, the Ursinus Business Economics Council, and departmental groups all provide students with information and advice about career options.

Among the many careers pursued by Ursinus graduates are the following:

ACCOUNTING. Through a combination of courses in the day and evening, Ursinus College offers a complete series of courses in accounting and prepares students to sit for the examination for certified public accountants.

BUSINESS. Graduates from all majors are employed by many types of industrial concerns, banking institutions, public utilities, transportation companies, department stores, chain stores, and the like. By electing languages, students may prepare for the growing opportunities in world trade.

COMMUNICATIONS. In the past decade, a number of Ursinus graduates have been pursuing careers in the mass communication industries, including broadcast and cable television, radio, newspaper and magazine publishing, and advertising and public relations. Since these industries recommend broad liberal arts training, interested students should major in English, political science, economics/business administration, or modern language, and minor in communication arts.

CHEMICAL RESEARCH: INDUSTRIAL CHEMISTRY. The College provides opportunities for students desiring to major in chemistry with a view to devoting their lives to some type of chemical research. Graduates find employment in the chemical industry doing pioneer work in the field of chemical research and development.

COMPUTER SCIENCE. An increasing number of Ursinus graduates are entering this rapidly-growing field of employment. A major in mathematical sciences with emphasis on our computer science courses is the usual path into computer work after graduation, but majors in the natural sciences and social sciences and sometimes the humanities also are entering the field.

DENTISTRY. Many graduates of the College have entered the field of dentistry. Ursinus provides the basic science program prescribed by the Council on Education of the American Dental Association.

EDUCATIONAL ADMINISTRATION. Basic courses in education are provided which are prerequisite to the professional courses in educational administration offered in graduate schools of education of leading universities.

ENGINEERING. Students who wish to study chemical, civil, electrical, mechanical or metallurgical engineering may avail themselves of a program which is being offered at Ursinus College in cooperation with engineering schools. A student at Ursinus College may transfer to an engineering school after completing three years of prescribed work toward a B.A. at Ursinus.

Ursinus College will grant the B.A. after the student has satisfied the requirements for that degree. The engineering school will grant the engineering degree upon completion of the fifth year.

FOREIGN SERVICE. The American Foreign Service presents attractive opportunities to a limited number of young people who are willing to prepare themselves adequately for service abroad. The history and social science courses, together with offerings available in the modern languages, provide preparation for the examinations required of applicants for positions in foreign service. Upon graduation students are urged to pursue additional work at a recognized graduate school.

GRADUATE STUDY. One purpose of the curriculum of the modern liberal arts college is to prepare students for advanced study in various fields of knowledge. Preliminary study is done by the student at the undergraduate level in his chosen major field. Those intending to enter graduate schools should have a thorough grounding in their chosen fields. As a reading knowledge of French and German is essential for most higher degrees, this knowledge should be acquired in the undergraduate school.

HEALTH, PHYSICAL EDUCATION AND RECREATION. It is possible to specialize in health, physical education and recreation, and at the same time obtain a general cultural education. Health and physical education graduates meet the requirements for certification to teach in this field in Pennsylvania and other states.

JOURNALISM. A student interested in journalism should enroll in the departments of history, political science, or English and elect widely in other fields. A year at a professional school of journalism is recommended.

LAW. A broad selection of courses, emphasizing writing and analytical skills, is considered the best preparation for legal study. While no one undergraduate major is recommended, many students preparing for law school concentrate their studies in economics, English, history or political science.

MEDICINE. Concentration in biology or chemistry is recommended in order to prepare students who are interested in the various aspects of medicine. Preparation is provided for schools of osteopathy and of veterinary medicine, as well as for the regular medical schools. Students should also investigate the opportunities in the allied medical fields, such as occupational and physical therapy, in which many opportunities are being offered.

MILITARY SERVICE. Ursinus College does not have a Reserve Officer Training Corps program. However, most branches of military service offer a variety of programs involving full time study at Ursinus combined with differing amounts of military leadership training during some summers. These programs lead to a commission as a junior grade officer upon graduation from Ursinus.

NURSING. Students who plan to enter the profession of nursing should register for courses in biology, chemistry, and liberal arts in order to qualify for consideration by schools of nursing. Ursinus does not give a degree in nursing but recommends transfer after two years, to a university school of nursing.

PHYSICAL RESEARCH. A program of concentration in physics and mathematics is offered to students interested in physics as a career.

PSYCHOLOGY. Undergraduate work in psychology is designed for those who seek admission to graduate schools or who wish to enter personnel work in industry. Undergraduate study in psychology is of assistance in the fields of teaching, guidance, law, clinical psychology, personnel and social work, nursing, and preparation for medicine.

SOCIAL WORK. A professional career in social work requires two years of graduate education in one of the approved schools of social work associated with a number of universities. There are, however, many opportunities for the untrained person holding a baccalaureate degree to find employment in both public welfare and voluntary social agencies; the former is entered through Civil Service examination. Positions are open in work with individuals and with groups. Many of these situations offer funded plans for graduate study upon satisfactory completion of a year of employment.

TEACHING. Secondary school teaching preparation which meets the requirements of the State Department of Education in Pennsylvania and of many other states is offered to those who look forward to a career in education. Ursinus offers programs for secondary school certification in English, French, Spanish, German, Latin, mathematics, mathematics-physics, biology, chemistry, physics, general science and social studies. Students seeking certification in social studies will specialize in economics and business administration, psychology, history or political science. Advisers should be consulted in each of these areas early in the student's college career. The program for certification for health, physical education and recreation covers both the elementary and secondary fields. Students should follow the curricula which have been approved by the Pennsylvania Department of Education, a copy of which is in the hands of the advisers. See page 32 for details about the Scholars in Education Awards for Pennsylvania residents entering the mathematics or science fields of secondary education.

CHURCH VOCATIONS. Most leading theological schools have as a requirement for admission, a degree in liberal arts. Students who are preparing for church vocations should plan a broad course of study which will include history, languages, literature, religion, and philosophy.

CAREER PLANNING AND PLACEMENT OFFICE

This office provides career counseling and placement services for all students and alumni. A vital part of this office is the Career Resources Center with its files of corporations, occupational references and careers materials. The Alumni Career Counseling Group of several hundred alumni helps students and alumni clarify career directions and meet potential employers. Campus recruiting is conducted by business and industrial firms, by graduate and professional schools, and by governmental agencies. Career seminars and workshops are provided for students each year. This office maintains part-time and full-time employment listings, internship, fellowship and scholarship information as well as placement files for seniors and alumni.

ADMISSION



The first step in seeking admission to Ursinus College is to file an application. The Office of Admissions will supply a form for this purpose to all who request it. Each completed application must be accompanied by a \$25 application fee. The applicant then must request that an official transcript of his or her secondary school records be sent to the College by the secondary institution. The transcript should include records for the ninth grade through at least the first marking period of the senior year, including class rank and recommendation.

All applicants must arrange for a personal interview on campus, unless, of course, the distance makes such a visit impossible. This requirement must be completed before the application is presented to the Committee on Admissions.

It is the responsibility of the candidate to make arrangements to take the Scholastic Aptitude Test of the College Board and to have the test results sent to the Director of Admissions.

TESTS

Candidates for admission to the freshman class are required to take the Scholastic Aptitude Test. It is recommended that applicants take the November or December Scholastic Aptitude Test in the senior year. Although not required, achievement tests are strongly recommended, especially in English composition and mathematics. Full information concerning the dates of the administration of these tests can be obtained from the high school guidance office or by writing directly to the College Board, P.O. Box 592, Princeton, New Jersey 08540. The College Board number for Ursinus College is 2931.

REQUIREMENTS

A candidate for admission to the freshman class must be a graduate of a secondary school.

If the applicant is a graduate of a four-year high school he or she must offer for admission at least sixteen units which are to be distributed as follows:

BASIC ACADEMIC CREDITS (10 units)

English, *Four years, Four units*

Elementary Mathematics (Algebra and/or Geometry) *Two Units*

Science, *One Unit*

Social Studies, *One Unit*

Foreign Language, *Two Units in One Language*

ADDITIONAL ACADEMIC CREDITS (at least 2½ Units)

Advanced Mathematics

Solid Geometry
Plane Trigonometry
Science
Social Studies
Foreign Language

ELECTIVES (*Maximum of 3½ Units*)

Not more than one unit will be granted for any single elective

Accounting
Drawing (Mechanical, Prepared Course)
Stenography or Shorthand
Business Training
Music and Art (History or Appreciation)
Business Law

Candidates graduated from a three-year high school should offer at least twelve units, which must include the basic credits above. Not more than one unit may be presented from the group designated as electives.

Applicants whose preparation does not coincide precisely with the foregoing outline may, in exceptional cases, be admitted to the College if, in the judgement of the Committee on Admissions, they are qualified to do college work satisfactorily.

EARLY ADMISSION

A limited number of outstanding juniors who have completed all or nearly all requirements for graduation from high school may be considered for early admission. Such students will be considered only upon the strong written recommendation of the guidance counselor and with the assurance that the student will receive his or her high school diploma either before or upon successful completion of the freshman year in college. It is the responsibility of the applicant to have the recommendation sent to the Office of Admissions.

The admissions process is identical with the following early decision procedure.

EARLY DECISION

Outstanding juniors may apply for admission in the late spring or during the summer preceding the senior year. Applicants should have their counselors send transcripts for the ninth through eleventh grades together with class rank, personality rating, and recommendation. They also should have junior year Scholastic Aptitude Test scores sent and arrange for interviews, preferably prior to Oct. 1. We strongly recommend that all candidates take achievement tests. Early decisions will be made and applicants notified in the late summer and early fall. Applications for early decision must be received prior to Nov. 1.

SPECIAL PROGRAM FOR HIGH SCHOOL STUDENTS AND SENIOR CITIZENS

Ursinus College has established a program for area high school students and senior citizens (defined as 62 years of age or older). Further information may be obtained from the Admissions Office.

ENGINEERING PROGRAM

Arrangements have been made with the engineering schools of the University of Pennsylvania, the Georgia Institute of Technology, and the University of Southern California, to which a student may apply for transfer after completing three years of prescribed work toward a B.A. at Ursinus College.

Ursinus College will grant the B.A. after students have satisfied the requirements for that degree. The engineering school will grant the engineering degree on satisfactory completion of the fifth year. For the outline of the program see *Suggested Programs*.

Candidates for the engineering program must present 4 years of entrance credit in mathematics. Their background in foreign language should be such that they are capable of entering the second year of language in college. If not so prepared they may make up the deficiency in foreign language in summer school.

PLACEMENT IN FOREIGN LANGUAGES

Students who wish to take the same foreign language in college that was taken in high school, must take the language placement test given by the modern language department at Ursinus. The result of this test combined with the high school language experience will determine the students' language placement at Ursinus.

ADVANCED PLACEMENT

Students who wish to be considered for advanced courses upon admission may submit the results of the advanced placement examinations given by the College Board. If the scores are satisfactory, the student may be advanced beyond the basic course and credit may be given toward the degree. Certain courses offer no advanced placement; therefore it is suggested that a candidate consult the director of admissions if any question arises. *After acceptance for degree standing, a student who wishes to receive transfer credits must receive written permission from the dean of the College or the director of admissions to take a course at another college.*

COLLEGE LEVEL EXAMINATION PROGRAM (CLEP)

Another means by which incoming students may earn advanced credit is through the College Level Examination Program (CLEP). These are examinations offered by the College Board as a means by which colleges may offer credit to students who have completed the equivalent of specified college courses through special experience or study. Ursinus College offers credit only in the subject examinations and not in the general examinations. The examinations are given at centers throughout the country. Applicants interested in the CLEP Program should write for a *CLEP Bulletin of Information for Candidates* to the Program Director, College Level Examination Program, Box 1821, Princeton, N.J. 08540.

SPECIAL STUDENTS

A limited number of applicants who are not candidates for degrees may be admitted as special students, providing that they have satisfactory preparation for the college courses which they wish to pursue. Special students who reside at the College must register for at least twelve hours of work in each semester. They are subject to the same regulations as other students.

TRANSFER STUDENTS

To transfer to Ursinus College, an applicant must request each institution that he or she has attended, including the secondary school, to send to the director of admissions a transcript of the academic record. In addition, a letter of personal clearance from the dean of students is required if the applicant has been a full-time student during the preceding year. It will be helpful if the candidate sends a catalog of the college he or she has been attending, marked to indicate the courses taken. Credit will be given for courses for which we offer a reasonable equivalent and in which a grade of C or better has been earned.

A maximum of sixty-two hours of work taken elsewhere can be credited to students transferring to Ursinus College.

PART-TIME STUDENTS

Commuting students who are candidates for a degree and who wish to pursue fewer than twelve hours of work are classified as part-time students.

HANDICAPPED STUDENTS

The Office of Admissions should be advised of any disabilities to assure suitable accommodations. Ursinus College is aware that handicapped persons may have special needs and is willing to make adjustments to meet these needs in order to make the program accessible to them.

NOTIFICATION OF ADMISSION

When candidates for admission are notified of acceptance by the College, each must make an advance payment of \$200.00 in accordance with the provisions of the letter of acceptance. This payment is credited to the bill for the first term. The payment is non-refundable and forfeited if the candidate does not enroll.

SUMMER SCHOOL

Ursinus College Summer School (day sessions) is open to candidates who may be classified in the categories below upon approval of the College:

1. College graduate (two-year and four-year).
2. Degree candidates (bachelor and associate), including recent high school graduates accepted as freshmen by Ursinus or other accredited schools.

Applicants from other institutions must have written permission from their respective institutions indicating that they will be given transfer credit for successful work in the courses selected.

3. Evening School students at Ursinus or elsewhere, with a high school diploma and with a minimum of 15 semester hours of work successfully completed (equivalent of 70 average).
4. High School students who have just completed their junior year, on recommendation by their counselors and by the Committee on Admissions. High School graduates 62 years or older, on recommendation by the Committee on Admissions. These two groups pay only half of the regular tuition.

Application of those whose qualifications do not fit the above categories must be acted upon by the Committee on Admissions.

Admission to the Summer School does not carry with it an assurance of transfer to degree standing at Ursinus College. For information and application forms, address the Director, Summer School, Ursinus College, Collegeville, Pa., 19426.

CONTINUING EDUCATION

Ursinus College conducts a comprehensive educational program for students who are older than the traditional full-time Ursinus student. Continuing education at Ursinus, like the traditional program, has the general mission of liberally educating students for responsible leadership in our society. Because of the age and the professional orientation of continuing education students, the program has certain emphases, particularly in business, that are not found in the traditional program. There are two components of continuing education:

Evening School: Founded in 1952, the Evening School is organized to make college work available to men and women employed in business, industry or teaching, and to others who may be interested. The degree programs generally emphasize courses in business administration, but a strong liberal arts component is available.

Full-time Ursinus students enrolled in the College may register for Evening School courses, with the permission of their advisers and the dean of the College, when class space is available. Evening School registration procedures must be followed.

The Summer Evening School is open to students with all the above qualifications, and also to all other high school graduates.

Special Programs: This area of the curriculum comprises credit and non-credit courses for students of non-traditional age. The College offers new learning opportunities in short courses, workshops, and seminars, without credit, to community residents and to students on campus.

The College also sponsors special credit programs for the non-traditional student, including teaching internships and courses leading to teacher certification in secondary education. In addition, the College has an agreement with Saint Joseph's University of Philadelphia enabling the University to offer its Master of Business Administration courses on the Ursinus campus.

Of equal importance, the College provides counseling, support services, individualized academic advising and special tuition grants for qualified adult students seeking admission to day school programs, part-time or full-time. This opportunity is attractive to those who wish to begin college for the first time, re-enter college after a period of absence, change career direction or study for personal enrichment.

For information on both Evening School and special programs, address Director of Evening School, Ursinus College, Collegeville, Pa., 19426.



FINANCIAL INFORMATION

TUITION, BOARD, FEES

STUDENT CHARGES PER YEAR

Basic student charges at Ursinus College include tuition, room and board for resident students, activities fee and college union fee. To meet these charges, a student is advised to consult the Financial Aid Office, which administers a comprehensive program of aid from federal, state, Ursinus College and other private sources. Approximately 75% of all students receive some form of assistance in paying tuition and fees.

For 1986-87, the following rates apply: tuition, \$7,250; room and board, \$3,300; activities fee, \$100.

Payments are made as follows: new students, \$200 advance payment as requested and \$100 reserve deposit as indicated on bill; old students, \$200 advance payment as requested. All students pay one-half annual charges in August less credit for advance payment, and one-half of the activities fee. The second one-half payments are made in December.

Charges quoted are made on an annual basis. Billings are presented semi-annually and are due for payment no later than the date indicated on the billing. A \$20 fee is charged for late payment.

When the student is a recipient of an Ursinus College scholarship award, credit of one-half the value of the annual award will be applied in the account to each semester bill.

For those who prefer to pay college costs on a monthly basis, the College offers an installment payment plan managed by the Richard C. Knight Agency of Boston. In addition, for those who prefer longer-term extended payments, the College makes available three other plans: the EduCheck plan through the Mellon Bank of Delaware, a loan program; and the New Insured Tuition Payment Plan, a combination prepaid/loan program; and a 10-year loan plan, both available through the Knight Agency. Information about these programs is available through the Financial Aid Office.

The College is not prepared to accept any other payment program. For 1986-87, there is a federally supported Parent Loan Program (PLUS). For additional information, see page 32. These arrangements should be made early enough to assume payment of bills no later than the date indicated on the billing.

EXPLANATION OF CHARGES

APPLICATION FEE: A fee of \$25 is paid by the candidate at the time the application is filed. *This fee is not refundable and is not applied to-*

ward the student's bill. Special and part-time students are charged at the rate of \$240 per semester hour. If registered for twelve or more hours, full tuition will be charged.

Checks should be made payable to URSINUS COLLEGE

ADVANCE PAYMENT (a) Upon acceptance by the College, applicants must make an advance payment of \$200 by May 1. This payment is credited on the bill for the first term. If they fail to complete matriculation, this payment is forfeited. (b) All regularly enrolled students must make an advance payment of \$200 at such time as may be designated by the College. This payment is forfeited if the student fails to complete registration.

FEE FOR TUITION covers classroom instruction, use of libraries, gymnasium, and the infirmary; ordinary medical attention; care by the resident nurse. Room and board charges cover lodging for the period that classes are in session.

The College reserves the right to make reasonable adjustments in the comprehensive fee at the beginning of any term to cover possible unforeseen costs.

FRESHMAN ORIENTATION FEE. A fee of \$35 is charged to all freshman students on their fall term bill, and is applied to the costs associated with the orientation programs.

ACTIVITIES FEE is charged to all full-time students, and to all special and part-time students enrolled for nine or more semester hours of credit. This fee supports the programs of the Campus Activities Board, activities approved by the Student Activities Committee, and the maintenance of the College Union Building. It also covers subscription to the *Grizzly*, the Ursinus College Forum, admission without further charge to all athletic contests at the College, and use of College athletic facilities as scheduled.

STUDENT ACCIDENT INSURANCE PLAN. A mandatory insurance plan for accidental injury is billed to each full-time student on the bill for the fall term, unless the student is first enrolled for the spring term, when a pro rata billing will appear on the student's bill.

ROOM DRAWING. Previously-enrolled students must pay \$50 in order to qualify for drawing a room. Credit for this amount will be applied to the charge for room and board for the following term, and is forfeited if the students fail to complete their registration.

SCIENCE FEE. \$125 per semester: All students majoring in biology, chemistry, physics, pre-engineering and freshmen who are enrolled in undesignated natural science. \$30 per semester: All sophomores, juniors and seniors majoring in psychology.

FINE ARTS FEE. A fee of \$35 per semester is charged for students enrolled in Fine Arts 221, 222, 321 and 322.

RESERVE DEPOSIT. A deposit of \$100 is required from all full-time, and all special and part-time students enrolled for nine or more semester hours of credit. The deposit is required to defray expenses incurred through damage to College property or through fines. This is included in the bill for the first term.

In order to maintain a balance of \$100 per student in the reserve deposit account at all times, students will be billed for each fine or instance of damage as it occurs. Any balance remaining will be refunded when the student graduates or withdraws from the College.

STUDENT TEACHING. An additional fee of \$125 is required of each student engaged in student teaching. This is payable upon presentation of the bill.

GRADUATION FEE. A graduation fee of \$25 is charged to all students on the last bill of their senior year. An additional deposit of \$25 will be required for the use of cap, gown, and hood. This deposit will be refunded upon return of the equipment.

TRANSCRIPT FEE. A charge of \$2.00 is made for each transcript of a student's record after the first. Requests for transcripts should be made to the Office of the Registrar. No grade reports or transcripts will be issued if there is an unpaid balance in a student's account.

ID CARD FEE. A charge of \$1.00 is made for the issuance of an ID card. If the card is lost a charge of \$5.00 will be made for its replacement.

CHANGE OF STATUS FEE. When students change their resident/day status, a new ID card must be issued. There is a \$5.00 change of status fee.

PLACEMENT SERVICE FEE:

- (a) Students until September 1 following their graduation: No charge.
- (b) Alumni from September 1 following their graduation, using existing credentials: \$1.50 per set of credentials.
- (c) Alumni who newly register or re-register with changes in references resulting in a reorganized placement folder: \$2.50 for registration or re-registration; \$1.50 per set of new credentials.

REGULATIONS

Bills for student fees are issued approximately thirty days before the beginning of each term. A student's bill must be settled no later than the date indicated on the statement.

No student who is indebted to the College or to any of its departments or agencies will be permitted to register at the beginning of any term, and all items due the College from a candidate for graduation must be paid before the candidate may be presented for a degree.

Delinquent accounts will be placed for collection, and the College will add collection costs to the delinquent amount. The total amount will then be payable in full.

Students who are absent from College because of sickness and retain their place in class pay student fees in full during their absence, except that when the absence is continuous over a period exceeding four weeks, resident students are allowed a pro rata rebate for each full week of absence.

Changes in marital status should be reported to the College immediately. Address changes must be reported to the College as soon as possible.

A student who voluntarily withdraws from the College must notify the dean of the College *in writing* and settle all bills within 30 days or be liable to dishonorable dismissal.

The possession or use of illegal drugs or firearms on the campus is forbidden.

The College reserves the right to exclude at any time students whose conduct or academic standing renders them undesirable members of the College community, and in such cases the fees due or paid in advance to the College will be refunded according to the policy shown below. Other regulations and procedures of vital concern to students are contained in the pamphlets, *Ursinus College Student Handbook* and *Financial Aid Brochure*.

REFUND POLICY

Upon a student's dismissal, suspension or withdrawal from the College prior to the first day of class, the student will receive a full refund of monies paid, less \$200.00 to cover application, enrollment and registration charges. Additionally, any student indebtedness to the College or to any of its departments or agencies will be deducted from any remainder due the student. There is no refund after the first half of an academic term because of a student's dismissal, suspension or withdrawal from the College, and no refund is made of amounts paid for dormitory rooms. After the first day of class and until the end of the first half of an academic term, the pro rata refund shall be as follows:

Withdrawal Within Week	Percentage Refund	Withdrawal Within Week	Percentage Refund
1	87.5	5	37.5
2	75.0	6	25.0
3	62.5	7	12.5
4	50.0	8	0

Date of withdrawal shall be the date on which the student notifies the Dean of the College in writing of such action, or the date on which the College determines that the student has withdrawn, whichever is earlier. Date of dismissal or suspension shall be the date on which the College has notified the student of such action.

SCHOLARSHIPS AND FINANCIAL AID

STUDENT FINANCIAL ASSISTANCE

The primary mission of the Financial Aid Office at Ursinus is to provide counseling and assistance to those students who would be unable to attend college without such aid. An application for financial aid does not hinder a student's chance for admission to the College. Awards are made without reference to ethnic origin, religion, sex, handicap or marital status.

The financial aid program assists full-time degree candidates in meeting college costs through institutional grants, scholarships, loans, and employment as well as aid through state and Federally supported grant and loan programs. (Part-time degree candidates may qualify for Pell Grants or Guaranteed Student Loans.) Ursinus College is pleased to offer merit scholarships and also recognizes merit awards given by outside organizations.

Financial aid may be offered singly or in combinations of grant, loan, and employment. The financial aid package is based on demonstrated need as determined through uniform methodology. Proven academic excellence and/or leadership abilities may also be considered.

APPLICATION PROCEDURE

All students wishing consideration for scholarship assistance or financial aid must submit a Financial Aid Form (F.A.F.), sides 1 and 2, to the College Scholarship Service (C.S.S.) no later than March 1. All late applications will be considered if funds are available. The F.A.F. and the student's individual state application, where applicable (i.e., PHEAA/Federal Aid Application), are the only applications required to be filed for financial aid consideration. These forms must be filed for each year the student wishes to continue aid.

The F.A.F. can be obtained from secondary school guidance offices, or the Ursinus College Financial Aid Office. The Ursinus College Code is #2931. If the F.A.F. is filed before March 1, freshman and transfer students will receive award notices by early April. Upperclass applicants should obtain the F.A.F. before the end of the first semester and submit it to C.S.S. before March 1. Upperclass award notices will be sent by early July. *The College requires Federal income tax verification for any aid offered by Ursinus College.*

An independent (self-supporting) student must file an F.A.F., sides 1 and 2, with the C.S.S. under the same guidelines as above. Also, an affidavit of non-support and parent federal income tax forms are required as documentation. To be considered independent, a student must not be claimed as an exemption by either parent for income tax purposes for the calendar year in which aid is received as well as in the prior year. In addition, a student may not receive assistance of more than \$750, including room and board from parents, stepparents or guardians for the same period of time; nor can the student reside with parents for more than a total of six weeks during that time.

All students should realize that financial aid is not automatic and requires formal application for each year that aid is expected. Foreign students must submit the declaration of finances available from the Office of Admissions.

URSINUS COLLEGE SCHOLARSHIP AND AID PROGRAMS

The College administers scholarship, loan and student employment funds totaling over \$4 million each year. Of the entire student body, approximately 75% receive some form of financial aid whether it be through student employment, loans, college grants or scholarships. Every student submitting an F.A.F. will be considered automatically for all aid programs administered by the College.

SCHOLARSHIPS

The Scholarship Committee will award as many as 10 full tuition scholarships to outstanding freshmen enrolling for the fall of 1986. A separate scholarship application is required for initial applicants.

STEINBRIGHT SCHOLARSHIPS, supported by endowments through the generosity of Harold D. and Edith C. Steinbright, and their daughter, Dr. Marilyn Lee Steinbright, are offered to four entering freshmen, known as Steinbright Scholars.

BOARD OF DIRECTORS SCHOLARSHIPS are granted to six entering freshmen, known as Board of Directors Scholars.

Both the Steinbright and Board of Directors Scholarships will be granted without regard to financial need. The recipients will be selected on their academic merit. All awards are subject to yearly review and will be continued for four years provided the scholar maintains a yearly average of 85 or better and demonstrates responsible citizenship.

URSINUS COLLEGE COMMUNITY SCHOLARSHIPS will be awarded to as many as eight freshmen from area high schools. The recipients must have demonstrated academic excellence and be *commuting* from their homes to the College. The candidates will be chosen on the basis of academic merit and without regard to financial need. The Community Scholarships will provide up to three quarters of tuition and will be renewed yearly provided the recipients maintain a yearly average of 80 or better and continue to commute from their homes to the College.

BOMBERGER SCHOLARSHIPS, named in memory of the College's first president, Dr. John H. A. Bomberger, are awarded to entering freshmen who have demonstrated both outstanding citizenship and leadership qualities in their high school and communities. Bomberger Scholarships will be granted without regard to financial need and will be awarded in amounts ranging between \$500 and \$1,500. These scholarships will be reviewed yearly and will be continued provided the recipient maintains a yearly average of 75 or better and continues to demonstrate responsible citizenship and leadership on campus.

FREELAND SCHOLARSHIPS, named in honor of Freeland Hall which stood at the center of campus for over 100 years, are awarded to entering freshmen who have demonstrated both academic and leadership qualities while participating in various types of extracurricular activities in high school. Freeland Scholarships are made without regard to financial need. These awards will be reviewed yearly and will be continued provided the recipient maintains a yearly average of 80 or better and continues to demonstrate leadership through campus activities.

OTHER CAMPUS AID PROGRAMS

URSINUS COLLEGE GRANTS: Grants or scholarships which are awarded by the College do not have to be repaid. Recipients must have demonstrated financial need as determined by the financial need analysis system and are expected to remain in good academic and social standing.

SUPPLEMENTAL EDUCATIONAL OPPORTUNITY GRANTS (S.E.O.G.): These grants are Federally funded and must be designated by the College to students with substantial financial need; especially those receiving negligible state or Pell Grant assistance. The average grant is \$1,000 although higher need students may receive up to \$2,000. Those filing the Financial Aid Form with Ursinus will be considered for this program.

CHARLOTTE NEWCOMBE SCHOLARSHIPS: This fund is supported by the Charlotte Newcombe Foundation. Women, age 25 or above, may apply for this scholarship. One half of the required coursework towards a bachelors degree must be completed and financial need must be demonstrated.

NATIONAL DIRECT STUDENT LOAN: This Federally funded student loan is offered to applicants with average to high financial need, especially when state or Pell Grant assistance is negligible. Loans from \$500 to \$1,500 are awarded and the total will not exceed \$6,000 for the four years of undergraduate study. The interest rate is 5 percent. N.D.S.L. loans must be paid within 10 years after a student graduates or leaves the College for other reasons, with repayment beginning six months after this established date. If a student continues with graduate study, repayment is deferred as long as half-time enrollment is maintained. Upon graduation, repayment begins on a normal schedule.

GULF OIL LOAN PROGRAM: The Gulf Oil Student Loan Fund is available to junior and senior students as an emergency fund. Total loans may not exceed \$1000. Recipients must be degree candidates and maintain a satisfactory academic average. The loans are at low interest with deferred repayment benefits, similar to the N.D.S.L. program. Need for the loan must be substantiated by a Financial Aid Form.

STUDENT EMPLOYMENT: The College provides students an opportunity to earn part of their college expenses through campus employment in more than 400 positions on campus. College Work-Study will be offered to eligible applicants to meet any remaining need after grant, scholarship, and loan assistance has been utilized. The C.W.S. entitlement is determined by subtracting all aid from the established need. Students not eligible for C.W.S. will be placed on the college payroll if possible. Working just seven hours a week, a student can expect to earn about \$700 during the academic year. Examples of the positions available are: dining hall work; lab assistantships in biology and chemistry; library assistantships; house management in the College Union; bookstore clerk work; departmental typing; administrative clerk work; maintenance work; and resident assistantships in the dormitories. Students are employed on a contractual basis and should contact the various campus employers upon arriving on campus in the fall. Earnings may be

applied directly to student accounts at the end of each semester or paid in cash on the bi-weekly payroll. Students are permitted to work a maximum of 20 hours per week. The number of hours may be further limited by excessive N.D.S.L. or G.S.L. borrowing.

Ursinus also participates in the P.H.E.A.A. Summer Work-Study Program which is designed to provide Pennsylvania residents with work experience coordinated with their academic field of study. The program must be limited to financial aid recipients due to the nature of its funding by the Federal government. Applications are available in early spring from the Financial Aid Office.

When off-campus openings are made available by private employers, these positions are advertised by the Career Planning and Placement Office. Applications for student campus employment are available in the Financial Aid Office.

FEDERAL AND STATE PROGRAMS

PELL GRANT: This is a Federal grant made available to students with exceptional financial need. Application is made by filing either a Financial Aid Form or a Pennsylvania State Grant/Federal Student Aid form. Both forms are available in high school guidance offices. Four to six weeks after filing, students receive a Student Aid Report (S.A.R.) with an index number. All copies of the S.A.R. should be sent to the Financial Aid Office for validation and determination of the grant award. The Pell application must be completed each spring for the following year.

STATE GRANT PROGRAMS: Many states have a separate state grant application or a State Specific Financial Aid Form. The states which allow grants to be utilized at Ursinus include: Pennsylvania, Connecticut, Delaware, Massachusetts, Ohio and Rhode Island. Applications are available in high school guidance offices and must be filed between January 1 and May 1, depending on the state. The maximum Pennsylvania state grant is \$1,500 currently, but is subject to change by the Pennsylvania legislature.

GUARANTEED STUDENT LOANS: Students may borrow up to \$2,500 annually at 8 percent interest through the G.S.L. program. Repayment is deferred until six months after graduation or withdrawal. Applications are available at participating banks and other lending institutions and must be renewed annually. These loans are based on financial need for families with annual adjusted gross incomes over \$30,000.

SOURCES OF ASSISTANCE NOT BASED ON NEED

NATIONAL MERIT SCHOLARSHIP: Ursinus sponsors four National Merit Scholarships each year. These scholarships are awarded through the National Merit Scholarship Corporation and are open to any National Merit Finalist who has selected Ursinus College as his first choice. The awards do not limit in any way the number of finalists who may be sponsored by other contributing organizations. Application should be made to the National Merit Scholarship Corporation through the secondary school.

SCHOLARS IN EDUCATION AWARDS: The Scholars in Education Awards program is available to Pennsylvania residents only who intend to major in mathematics or science and who plan to enter the teaching profession under the public school system. To be eligible to apply, Ursinus students must have a combined SAT score of at least 1000 with a minimum mathematics score of 550, or an ACT score of 22 in English and a minimum of 27 in mathematics. Nominees must carry a 3.0 average in science and/or mathematics and be in the top first fifth of the high school class. Awards are made without regard to financial need and are valued at 50 percent of annual tuition. Questions concerning the program may be directed to the Financial Aid Office.

PARENT LOAN PROGRAM (P.L.U.S.): This is a Federally supported program of loans to parents of dependent undergraduate students. The maximum amount a parent may borrow for any one student in any academic year is \$3,000. The aggregate loan limit for each dependent student is \$15,000. *Please note that repayment is required to begin within 60 days after the loan disbursement.* There is no Federal interest subsidy on parent loans. The interest rate for the Parent Loan Program is 12 percent. Loan applications are available at local banks and other lending institutions and many require standard commercial credit checks.

TUITION EXCHANGE: Ursinus College is a member of the Tuition Exchange Program. Requests by children of faculty members of member institutions for tuition remission will be considered upon application. Those who receive aid through the Tuition Exchange Program are not eligible for additional Ursinus College grants.

OTHER SOURCES OF AID: In addition to the programs described above students should investigate other grant and scholarship programs sponsored by a variety of private organizations, including business corporations, foundations, civic clubs, and the like. High school guidance counselors usually maintain lists of the local organizations sponsoring awards for college bound students.

Recipients of financial aid are required to maintain satisfactory academic progress in order to be considered for continued financial assistance from Federal, state, and college sources.

Satisfactory progress will be reviewed on an annual basis at the end of the spring semester. Students who do not meet the standards of satisfactory progress will lose all financial aid for one year, at which time progress will be re-evaluated.

Financial aid recipients must successfully complete the required number of credits listed below:

Full-time Freshman	24
Full-time Sophomore	48
Full-time Junior	72
3/4 time Freshman	18
3/4 time Sophomore	36
3/4 time Junior	54
1/2 time Freshman	12
1/2 time Sophomore	24
1/2 time Junior	36

The maximum time in which to complete the 122 credits for graduation is five years for a full-time student, seven years for a three-quarter-time student, and 10 years for a half-time student. The assumption is that a full-time student will need to take a minimum of 24 credits a year in order to complete a degree in five years. The same concept applies to three-quarter-time and half-time-students.

The minimum acceptable grade average is determined by the faculty. If a student drops below a 70 yearly grade average, the faculty will decide if the student may continue at Ursinus. If the decision is positive, and the student has completed the necessary number of credits, he or she may continue to receive financial aid.

However, if the student has below a 70 yearly grade average and is permitted to remain at Ursinus, his or her Ursinus grant will be reduced by 10 percent for the following academic year. Whenever possible, this reduction in grant may be compensated for by an increase in loan or campus job earnings.

Both deficiencies in grades or earned credits may be made up by taking summer school classes at Ursinus or courses approved by our faculty to be taken at another college.

The Ursinus College Financial Aid Brochure provides detailed information on all programs and is available in the Financial Aid Office.



EDUCATIONAL PROGRAM

The departmental system is employed in the organization and administration of instruction. By this system, majors are offered in 13 departments: biology, chemistry, classical studies; English; economics and business administration; health, physical education and recreation; history; mathematics and computer science; modern languages; philosophy and religion; physics; political science; and psychology. In addition, there are interdisciplinary majors in American public policy, applied mathematics/economics, and international relations.

CHOICE OF STUDIES

At matriculation students designate areas of academic interest, either in humanities, social sciences, or natural and physical sciences. If they feel certain about their future plans, they may designate subjects of major concentration they intend to pursue. Students will be assigned freshman advisers, and with the advice and consent of the advisers, freshmen select their courses of study.

It has become necessary to limit the number of students in scientific programs. In order to follow a curriculum in science, candidates must indicate their intention to do so *upon application for admission to the College*. If students apply for and are admitted to a program in the humanities or social sciences, they may subsequently transfer to a program in the science *only* upon approval of the Committee on Academic Standing. Requests for such a change in major should be addressed to the registrar's office.

By the end of the freshman year, each student must designate a major field of study. The chairman of the student's major department will assign him or her an academic adviser. The approval of the adviser is necessary before a student may register for or enter any course of study, or discontinue any work.

REGISTRATION

First-year students register for the fall semester in consultation with their advisers on freshman orientation days held during the summer. Returning students register for the fall semester during the spring registration period listed in the back of the catalog. Registration for the spring term is completed for all students during the fall registration period listed in the back of the catalog.

Students are registered after they submit course-of-study sheets to the registrar, according to the schedule for the registration period published by the Registrar's Office. Before that, students consult with their advisers to prepare schedules of courses for their college careers. Courses prescribed

as degree or departmental requirements or to satisfy conditions must take precedence over and be scheduled before elective courses.

Students must remember that they alone are responsible for making sure they have completed college requirements and departmental requirements. When students change their majors, they must fulfill the requirements of the most-recent major department in order to be graduated.

Students are not permitted to earn credit towards graduation from Ursinus College by study at another college unless they have been granted permission by their academic advisers and the Committee on Academic Standing. Required courses in the department of a student's major should be taken at Ursinus. Approval to take such courses elsewhere will be granted by the Academic Standing Committee only with the approval of the chairman of the major department and if special or mitigating circumstances exist. Credit for approved courses taken elsewhere will be transferred upon successful completion of the course with a grade of "C" or better and upon receipt of an official transcript from the other college.

Students may add or drop courses at any time during the first two weeks of classes. No full semester course may be added after the second week of classes, and no physical education activity course may be added after the first week of classes.

Courses dropped after the second week of classes (first week for physical education activities courses) but before the mid-point of the course will be designated with a W on the student's record. Students who withdraw after the mid-point of a course will receive a grade of WF. Students who withdraw from a course without permission will receive a grade of F. A fee is charged for any change in registration after the specified registration period for each class.

WITHDRAWAL

Students who seek to withdraw from the College must notify the dean of the College in writing of this intention and its effective date, and must satisfy all obligations (including bills, the return of keys, equipment, and other College property). Failure to meet any such obligation will render the student liable to dishonorable dismissal.

REQUIREMENTS FOR GRADUATION

The requirement for the degree of Bachelor of Arts or Bachelor of Science is the completion of 122 semester hours, which must include all the courses required by the faculty of all students for graduation and the courses required by the department to which the student belongs.

To qualify for the degree of Bachelor of Arts or Bachelor of Science and to receive a diploma from the College, not the Evening School, a student must be registered for a minimum of 60 semester hours of credit at Ursinus and must have spent a minimum of the two terms of the senior year as a full-time student, taking at least 12 credits during each of the last two semesters before graduation.

A full-time student may not take fewer than 12 semester hours of work in any one term. The normal maximum for a term is five courses, or 15 semester hours. Two hours above the normal maximum (17) may be scheduled with the adviser's approval; three more (18) may be scheduled with

the adviser's and the dean of College's permission, provided the student's average for the preceding term is at least 85. Engineering and physical education majors are an exception to this rule: they may schedule three hours more than the maximum (18) each term without special permission. Students carrying fewer than 12 hours are not permitted to remain or become residents of College residence halls.

All requirements for graduation must be satisfied before the end of the last day of examination week preceding commencement. *Each student must bear responsibility for fulfilling the requirements for graduation.*

CLASS ATTENDANCE

Ursinus College is committed to the principle that class attendance is a vital part of its academic program, making possible that dialogue between student and teacher which is the foundation of the educational process. Students should therefore recognize that absence from class denies them access to the full measure of college education. While urging regular class attendance, the College at the same time wishes to allow students an opportunity to develop a personal responsibility toward academic work. In keeping with these convictions, the following policies govern class attendance.

Each student is expected to exercise reasonable judgement regarding class attendance. Every student is accountable for all work missed because of class absence. *Instructors, however, are under no obligation to make special arrangements for students who are absent.*

A first-year student who is not on the Dean's List and who is absent from a course for a total of more than two weeks' meetings may be excluded from the course with a grade of F unless the dean, after consultation with the faculty member, permits the student to be reinstated.

Students on academic probation are subject to the same regulations as first-year students.

Students for whom an academic warning is issued must limit future absences in that course to the number of times the course meets per week. After the issuance of an academic warning, a student who exceeds the allowed number of absences may be excluded from the course with a grade of F unless the dean, after consultation with the faculty member, permits the student to be reinstated.

Any instructor may set attendance regulations for courses, but in no case will a student be limited to fewer absences than twice the number of weekly meetings of the course. The faculty member must announce the attendance policy and its consequences on the class syllabus.

GRADES OF SCHOLARSHIP

When a course has been completed, the standing of the student is expressed, according to his or her proficiency, by one of the following grades: A+, A, A-, B+, B, B-, C+, C, C-, D+, D, D-, F. Letter grades have the following percentage equivalence assigned:

A+	98.33	A	95.00	A-	91.67
B+	88.33	B	85.00	B-	81.67
C+	78.33	C	75.00	C-	71.67
D+	68.33	D	65.00	D-	61.67
F	45.00				

A grade of F denotes a failure in the course. Students who have received passing grades are not permitted to retake courses for the purpose of raising their grades.

The mark of I, which may be given only with the written permission of the dean, is reserved for cases of incomplete work or of failure under extenuating circumstances. If the mark of I is not removed within one month after the beginning of the following regular term, the grade F will be assigned for the course.

ACADEMIC PROBATION

A student is required to have both a cumulative and a semester average of 70.00 at the end of each semester in College. Students who fail to do so will be placed on academic probation by the Committee on Academic Standing or by the faculty and may be restricted in their extra-curricular activities. A student currently on academic probation who fails to achieve the average specified by the faculty will be subject to dismissal. On-campus employment and Ursinus College financial aid will be restricted for a student whose average for the preceding academic year, including summer session, is below 70.00.

DISMISSAL

Students whose semester average at the end of their first or second semester at Ursinus College is below 65.00, whose cumulative average is below 65.00 at the end of the first year, or whose cumulative average is below 70.00 at the end of the third semester at the College or thereafter will be dropped from the College unless, as a result of mitigating circumstances, the faculty votes that such students be permitted to continue. A student may also be dismissed if he achieves a semester average below 70.00 for more than two successive semesters, regardless of a cumulative average that may be above 70.00. The action of the faculty in all such cases is final.

Any student may be dismissed from the College for academic violations such as cheating or plagiarism, regardless of the student's academic average. Non-academic reasons for dismissal are discussed on page 27.

RE-ADMISSION

A student who is dropped from the College for academic reasons may be considered for re-admission. Unless there are unusual circumstances, one academic year must pass before such a student is re-admitted. During this time the student should take courses at another institution or engage in some activity that will demonstrate to the faculty that the student is prepared to return to the College for serious academic work. Application for readmission is made to the Office of Admissions.

SUMMER SCHOOL

The curriculum of the Summer School is announced in the spring, and information concerning course offerings is released. In the day sessions, courses are offered over a period of 12 weeks. A student carries only one course at a time but may enroll for a full program. The plan permits the completion of a three-semester-hour course in the three weeks, two three-semester-hour courses in six weeks, four three-semester-hour courses in 12 weeks and two four-semester-hour courses in eight weeks. It is possible to carry two years of work in a language in 12 weeks for 12 semester credits. For further information contact the director of Summer School.

In the evening sessions, three-semester-hour courses meet two evenings a week for seven-and-one-half weeks. Two courses may be carried simultaneously. However, students may not be enrolled in the evening session if they are also enrolled in either of the first two day sessions. For further information contact the Evening School.

Students wishing to take summer school at other colleges must obtain approval in advance from their adviser and from the Dean's Office. In order for credits for such approved courses to be transferred to Ursinus the student must obtain a grade of C (2.0 or 75.00) or better and arrange for the college where the courses were taken to send an official transcript to Ursinus.

STUDY ABROAD

Ursinus College students may spend a semester, a year, or a summer at a foreign university, provided they are students in good standing, are recommended by their major adviser, and, in the opinion of the dean and the faculty, will be worthy representatives of the College and will profit from this experience. Normally, only juniors are encouraged to apply for study abroad, but qualified sophomores also may be recommended. The immediate knowledge of the cultural heritage of another country, with its contemporary economic and social problems, affords students an awareness of differing values and an understanding of our own country's relation to issues which confront the world today. Students, whether language majors or not, are encouraged to study abroad, but they normally should have completed courses at least through the intermediate level in the language of the country involved. The course of study abroad must be approved at the time that permission is given. Upon evidence of successful completion of the program, a maximum of fifteen (15) credits per term will be given for studies pursued abroad. An examination covering the year's work may be required by the department chairman upon the student's return. Information may be obtained from the chairman of the modern languages department. Interested students should also see the Ursinus Summer Study in Japan program, page 67, and Summer Study in France listed under Modern Languages. (Page 102).

DEGREES

Ursinus College confers four degrees in course: Associate of Business Administration (Evening School Only), Bachelor of Arts, Bachelor of Science, and Bachelor of Business Administration (Evening School only). For specific requirements of the curricula leading to each of these degrees, see *Departmental Requirements* and the catalog of the Evening School. Degrees are conferred only at convocations and *candidates must present themselves in person.*

A student in good standing who has earned a minimum of ninety semester hours of credit and who withdraws from the College to enter an accredited graduate or professional school may, with the approval of the faculty, receive a baccalaureate degree from Ursinus after earning any doctoral degree from an accredited institution.

The College may confer the honorary degree of Doctor of Divinity, Doctor of Humane Letters, Doctor of Pedagogy, Doctor of Science, Doctor of Letters, and Doctor of Laws on persons whose distinguished ability and service have been deemed worthy of such recognition by the faculty and the Board of Directors.

HONORS

COMMENCEMENT

Two Commencement honors are assigned: one, the Valedictory, to the person attaining the highest standing in the graduating class, the other, the Salutatory, to the person attaining the next highest standing.

GRADUATION WITH DISTINCTION

Members of the graduating class who have shown great proficiency in their study at Ursinus College may be graduated with distinction if, in the opinion of the Faculty, their attainments warrant such honors. These distinctions, *Summa Cum Laude*, a cumulative average of 94.50 or above, *Magna Cum Laude*, 92.50 to 94.49; and *Cum Laude*, 89.50 to 92.49, are given only for unusual excellence in all subjects pursued by the candidate. Graduation honors will be calculated at the end of the fall term. If as a result of work done in the spring semester a student should merit distinction or a higher distinction, such honors will be awarded *ex post facto*.

DEAN'S HONOR LIST

All regular or full-time students achieving an average of 87.50 for a semester are announced at the end of that semester as members of the Dean's Honor List. It is an Ursinus tradition to publish at the Founders' Day Convocation the names of those students who have been carried on the Dean's Honor List for the preceding two semesters.

HONOR SOCIETIES

THE CHAPTER

The Chapter, a society of faculty members with Phi Beta Kappa membership, is especially concerned with cultivating the arts and sciences at Ursinus College. Each year The Chapter designates certain seniors as "Chapter Scholars" on the basis of the quality and range of their intellectual interests and attainments.

SIGMA XI

Sigma Xi, national honorary fraternity for the recognition and encouragement of scientific research, was founded at Cornell University in 1886. The Society was incorporated in 1942. The Ursinus College Sigma Xi Club was installed on October 27, 1966. Election to the Club is based on achievement in original research, and limited to juniors, seniors, and faculty.

PI GAMMA MU

Pi Gamma Mu, the national social science honorary society for the recognition of scholarship in the social sciences, was founded in 1924. It is affiliated with the American Association for the Advancement of Science. The Ursinus Chapter, Pennsylvania Sigma, was installed January 1, 1950. Election to the society is based on academic achievement in the social sciences and limited to juniors and seniors.

ALPHA SIGMA LAMBDA

Alpha Sigma Lambda, a national honorary society for continuing higher education students, was founded in 1945 at Northwestern University. The Ursinus College chapter, Gamma Omicron, was installed April 8, 1983. Election to the society is based on academic achievement and is limited to sophomore, junior and senior continuing education students.

Other honorary societies are discipline-based. They include: *Alpha Psi Omega*, a national honorary dramatics fraternity; *Beta Beta Beta*, an honorary society for the biological sciences; *Omicron Delta Epsilon*, the international honor society in economics; *Pi Nu Epsilon*, the national honorary music fraternity; *Phi Sigma Iota*, the national foreign language honorary society; *Psi Chi*, the national honor society in psychology; *Sigma Pi Sigma*, the national physics honor society.

FOREIGN STUDENTS

Foreign Students, under guidance of the foreign student adviser, are usually classified by the College as special students, at least for the first year. They may then be admitted to degree candidacy for subsequent years. Although facility in understanding spoken English will be a requisite for admission, foreign students would do well to arrive in the United States before the opening of the college year in order to become familiar with American English. A program such as the "homestay" of one month as arranged through the Experiment in International Living, Putney, Vermont, U.S.A., is highly recommended to anyone whose native tongue is not English. Further information can be obtained directly from the Experiment. At the discretion of the dean of the College and of the language department, residents of foreign countries fluent in the language of those countries are exempt from the foreign language requirement.

Foreign students should make sure that their visas are valid for more than a single entry into the United States, since on vacation trips they may wish to cross the borders into Canada or Mexico.

All foreign students who wish to apply to Ursinus College are required to take the Test of English as a Foreign Language (TOEFL). For information, write to T.O.E.F.L., Box 899, Princeton, N.J., U.S.A., 08540. Students in Europe should write for T.O.E.F.L. application forms to C.I.T.O., P.O. Box 10203, 6801 BE, Arnheim, Netherlands. A minimum T.O.E.F.L. score of 550 is required.

No foreign student should arrive at the Ursinus campus until all credentials are complete and a formal letter of acceptance has been received.

Dormitories and dining halls are not in operation during college holidays.

Students arriving in New York from abroad can arrange to be met there by a representative of the Y.M.C.A. International Student Service. This representative will take the student through customs procedures, arrange ongoing limousine transportation or overnight accommodations in New York, and assist the student with any problems occurring at the port of entry. To arrange for this free service, contact the Y.M.C.A. International Student Service Arrival Program, 236 East 47th Street, New York, N.Y., 1001 Telephone: (212) 319-0606. Telex: ISS 620675; Cable: FORSTUDENT. Request for assistance must be received by the Y.M.C.A. International Student Service at least three days before the student's arrival in New York.

Direct airport limousine transportation is available from Philadelphia (Liberty Cab Co.) or New York (Salem Transportation Co.) to King of Prussia/Valley Forge, near Collegeville. If students have notified the Foreign Student Adviser of their travel plans, including the date, place, and time of arrival, the airline name and flight number, they can be met by College representatives at King of Prussia/Valley Forge, and transported by car to the campus. The present Foreign Student Adviser, Dr. Shirley Eaton, may be contacted for assistance at the college (215-489-4111) or, in case of emergency, at home (215-489-4373).

THE URSINUS PLAN 1986

TIERS	CURRICULAR GOALS	
<p>TIER I</p> <p>Basic Intellectual Skills</p>	<p><i>First</i></p> <p><i>Second</i></p> <p><i>Third</i></p> <p><i>Fourth</i></p> <p><i>Fifth</i></p> <p><i>Sixth</i></p>	<p>Development of effective writing skills</p> <p>Development of effective speaking skills</p> <p>Development of ability to think and communicate in mathematics and other forms of quantitative analysis</p> <p>Knowledge of a foreign language</p> <p>Introduction to methods and insights of the humanities, natural sciences and social sciences</p> <p>Physical education for lifetime health and recreation</p>
<p>TIER II</p> <p>The Major Specialization</p>	<p><i>Seventh</i></p> <p><i>Eighth</i></p>	<p>Intensive study in a single discipline</p> <p>Research and problem-solving skills including the ability to pose significant questions, to collect appropriate data, to subject it to critical analysis, and to reach logical conclusions</p>
<p>TIER III</p> <p>The Minor Concentration</p>	<p>(Optional development of student's special or vocational interests)</p>	
<p>TIER IV</p> <p>Electives-</p> <p>Individual Choice</p>	<p><i>Ninth</i></p> <p><i>Tenth</i></p>	<p>Knowledge of the diverse cultures and value systems of our society and the contemporary world, and the development of a capacity for making independent and responsible value judgements</p> <p>Knowledge of the fine arts</p>

A CURRICULUM OF LIBERAL EDUCATION RELEVANT TO THE WORLD TODAY

The curriculum of Ursinus is central in meeting the mission of the College—to develop independent and responsible individuals who are prepared for a creative and productive role in a changing world. To support this mission, the College created The Ursinus Plan, effective with the 1979-80 academic year.

The structure and content of The Ursinus Plan are shown on the accompanying table. The plan builds a student's education in four related tiers. Within these tiers are the ten goals toward which the faculty feels that liberally educated persons should strive.

After explaining the four tiers and the curricular goals, the following section shows the course requirements and options for meeting each goal.

THE FOUR TIERS OF LEARNING

TIER I

Basic Intellectual Skills

This portion of the curriculum promotes the intellectual skills fundamental to a liberal education and supplies the foundation for advanced academic work. All students must meet the TIER I requirements.

TIER II

The Major Specialization

Drawing upon skills and insights gained in TIER I the student undertakes an intensive study in a single discipline, supported by courses in related disciplines. Recognizing that student needs and goals are not uniform, the individual departments offer two or more specializations designed to meet various student needs. In general, these specializations are of two types:

- *The Core Specialization* consists of a group of courses central to the field. Students will ordinarily elect this specialization when they wish to elect a minor concentration in another academic department or a special interest minor concentration related to specific career goals.
- *The Advanced Specialization* consists of the core specialization in the major and additional advanced study in the major itself. It is offered in departments in which intensive preparation is deemed advisable for students wishing to pursue graduate study or to apply to professional schools. Students should see departmental advisers for details.

TIER III

The Minor Concentration

Students have the opportunity in TIER III to develop a secondary academic specialty, amplify basic skills or acquire knowledge related to their vocational goals or career plans. Although the minor concentration is not required, students who elect the core specialization in their major discipline are strongly urged to elect the minor concentration appropriate to their interests. Three types are available:

- *Minor Concentration In An Academic Discipline.* Students may elect to follow a prescribed course of study outside their major discipline, thus

achieving depth in a second discipline.

- *Special Interest Minor Concentration.* The student may elect a special interest minor concentration approved by the faculty, whether departmental or interdisciplinary, such minor concentrations are designed to help prepare students to extend their liberal arts training specifically to incorporate their vocational or educational goals.
- *Interdisciplinary Minor Concentration.* Students who have interests spanning several departments may design individual minor concentrations in consultation with the heads of the involved departments.

The following minor concentrations have been approved by the faculty:

Art	Human Behavioral Development
Athletic Training	Latin
Anthropology	Latin America Studies
Astrophysics	Management Science
Biology	Mathematics
Business Administration	Music History and Theory
Chemistry	Neurosciences
Classical Studies	Pennsylvania German Studies
Coaching	Philosophy
Communication Arts	Physics
Computer Science	Political Science
East Asian Studies	Quantitative Methods
Economics	Recreation
English	Religion
Finance	Romance Languages
French	Secondary Education
General Psychology	Secondary School Teaching
German	Sociology
Greek	Spanish
History	Statistics

Please refer to appropriate departments under "course requirements" for prescribed courses in each approved minor concentration.

TIER IV

Electives: Individual Choice

In TIER IV students have the opportunity to explore unfamiliar subjects, to deepen understanding of material previously introduced, and in general to broaden their intellectual horizons. This is accomplished by giving students freedom to choose courses of greatest interest to them. A number of special courses are provided within TIER IV, including College Scholars, Senior Symposium, interdivisional studies, and departmental honors. These offerings are described elsewhere in the catalog. Most departments offer a number of courses which do not have prerequisites. All students are urged to read the catalog carefully and take advantage of the variety of possible electives. Students are also urged to consult with their advisers regarding their selection of electives in order to insure their thoughtful progress toward their educational goals.

THE CURRICULAR GOALS

In most instances, the curricular goals may be achieved in a number of ways, and provision is made in some cases for the student who is competent in an area to exempt that curricular goal. Together these goals provide for the development and growth of basic intellectual skills vital for effectiveness and competence in any adult endeavor.

Many students may wish to develop more specific vocationally-related skills, or to take courses related to specific career interests. The College's course offerings provide many such opportunities. For the guidance of the student some of these opportunities are brought together systematically in the form of the special interest minor concentrations. Although not required to do so, students who do not plan to continue their formal education beyond the Ursinus degree are strongly urged to elect a special interest minor concentration in TIER III.

COURSE REQUIREMENTS AND OPTIONS

The requirements and options for working toward each goal are shown below. The available choices should make an Ursinus education flexible enough to meet the needs of all students.

First Goal: Development of effective writing skills—

- (a) Two semesters of First Year Composition 101, 102, including a term paper each semester; or
- (b) One semester of First Year Composition 101, 102, and with the permission of the chairman of the English department one advanced composition course, or
- (c) Placement out of First Year Composition 101, 102, at the discretion of the chairman of the English department, plus one advanced composition course, or
- (d) Six semester hours of credit in lieu of First Year Composition 101, 102 upon the achievement of a score of 4 or 5 on the Advanced Placement Test of the College Board of Examination. Additional composition or literature courses are recommended.

Second Goal: Development of effective speaking skills—

- (a) Communication Arts 201; or
- (b) Placement out at the discretion of the communication arts department upon satisfactory demonstration of speaking ability.

Third Goal: Development of the ability to think and communicate in mathematics and other forms of quantitative analysis—

- (a) Any mathematics course except Math 101, 110 and 215; or
- (b) Philosophy 106.

Fourth Goal: Knowledge of a foreign language—

- (a) Two semesters of language at the 200 level; or
- (b) Two semesters of advanced language study; or
- (c) At the discretion of the dean of the College and the language departments, residents of foreign countries fluent in the language of that country are exempt from this requirement.

Fifth Goal: An introduction to the methods and insights of the humanities (including an introduction to the history of Western civilization), natural sciences and social sciences—

- (a) Humanities, including an introduction to the history of Western civilization: (1) History 101, 102; or (2) Philosophy 101, 102; or (3) World Literature 201, 202.
- (b) Natural sciences: (1) major in biology, chemistry, mathematics or physics, or (2) an introductory sequence of two semesters in astronomy, biology, chemistry, physics or geology, or (3) six semester hours of advanced work in a natural science.
- (c) Social sciences: (1) major in economics and business administration, political science or psychology; or (2) six semester hours of work selected from the following: Economics 101 and/or 102; or any offerings in anthropology, political science, psychology, or sociology.

Sixth Goal: Physical Education for lifetime health and recreation—

- (a) Four half-semester units are required of all students. One unit concerns concepts of health and physical education and is a prerequisite to the remaining units. The other units consist of a number of fitness and lifetime recreation activities from which the student must choose three; or
- (b) Major in health, physical education and recreation.

Seventh Goal: Intensive Study in a single discipline—

See departmental requirements for each major discipline.

Eighth Goal: Research and problem solving skills, including the ability to pose significant questions, to collect the appropriate data, to subject it to critical analysis, and to reach logical conclusions—

Each department provides training in these skills for all departmental majors.

Ninth Goal: Knowledge of the diverse cultures and value systems of our society and the contemporary world, and the development of a capacity for making independent and responsible value judgements—

- (a) It is strongly recommended that when choosing electives, each student include at least one course which deals with non-Western perspectives on human experience. Ursinus offers regular courses in non-Western (i.e. societies other than English-speaking North America, Great Britain, and Continental Europe) history, cultural anthropology, government, literature, philosophy and religion.
- (b) It is also strongly recommended that when choosing electives, each student select at least one course which includes an analysis of values and their role in making decisions. Appropriate electives currently offered are Interdivisional Studies, Senior Symposium, and courses in philosophy and religion.

Tenth Goal: A knowledge of the fine arts—

It is strongly recommended that students select at least one elective course in music, literature, or the fine arts. All Ursinus students have the opportunity to attend concerts, lectures, exhibits, plays, and films both at the College and in the Philadelphia area.

COLLEGE SCHOLARS' PROGRAM

Qualified freshmen in their second term, sophomores, juniors, and seniors may earn up to nine credits (not more than three per semester) by pursuing guided independent research as research scholars or by working subjects not in the regular college curriculum as independent students.

1. Each semester of passing work in the programs will carry three semester credits.

2. A student may work for no more than one semester in the department of his academic major.

3. The divisions of the program are natural sciences, languages, social sciences, and humanities.

4. In the Research Scholars' Program, the candidate must prepare a research prospectus outlining the proposed research project. Projects must be clearly inter-disciplinary in nature, and must meet the approval of the student's academic adviser and the College Scholars' Committee. Research scholars prepare a research paper under the supervision of a tutor; participate in two seminar meetings with the other scholars working in the same division of the program; and take an oral examination before the College Scholars' Committee, the tutor, and, when feasible, the student's academic adviser, and an outside authority in the student's field. The College Scholars' Committee will assess and grade the research paper and the oral examination.

5. In the Independent Study Program, the candidate must prepare a prospectus stating the subject to be studied and materials to be used. This prospectus must be approved by the student's academic adviser and by the College Scholars' Committee of the faculty, which may consult the head of any department logically concerned. The student must submit to the College Scholars' Committee a course outline approved by a tutor before the end of the second full week of the semester. The student, the tutor, and the committee will then meet to determine an appropriate format for a final report and examination. Independent students will also be required to participate in the seminar meetings of the program. The independent student will be graded by the committee on the basis of the course plan agreed upon at the outset, with the tutor devising and administering the final examination, oral or written, as in any regular course.

DEPARTMENTAL HONORS

Students with high overall academic standing who have demonstrated an exceptional competence, the capacity for independent, original research and disciplined scholarship may be awarded departmental honors in the department of their major or minor fields of concentration, subject to the following regulations:

1. To be eligible for departmental honors, students must have (a) a cumulative average of 85 and an average of 88 in all courses taken in the department in which they seek honors, based on the work of six semesters,

or (b) a cumulative average of 88 and an average of 88 in the department in which they seek honors, based on the work of the last four semesters. Students who have attended Ursinus less than four semesters must have the grade averages as in (b), and must obtain approval of the dean of the College.

2. To be admitted to candidacy for departmental honors, students must obtain written consent of a faculty member who will serve as the project adviser, have their candidacy certified by the chairman of the department in which they wish to pursue honors, and have the research/individual project approved by the department.

3. Students register during the spring pre-registration period of their junior year for the two-semester sequence of Research/Independent Work (491-492).

4. The Honors Project, completed in the research/independent work courses, must demonstrate disciplined, independent and original scholarship or creativity. If the candidates receive a passing grade, they will earn credit hours toward graduation, even though their work may not be recommended for departmental honors.

5. Departmental honors will be awarded on the recommendation of the department and the approval of the Faculty.

6. Departments specify the date for the candidate to submit the completed thesis. In order that the faculty may consider the awarding of honors, the candidate must deposit the completed thesis in bound form following the format established by the Myrin Library, the written recommendation of the project adviser and approval of the department in the office of the dean of the College by the Monday of the last full week of classes.

STUDENT-INITIATED MAJORS

Students who complete the freshman year and whose major interests span two or more recognized academic fields, if they have a cumulative B average (83.33 or above), may arrange a specialized major which combines these fields, such as biophysics, biopsychology, chemical biology, American history and literature, comparative literature.

In order to set up such a specialized major, the student and the appropriate department heads, in consultation with other department members, must draw up a written statement of all courses and additional major requirements, which may include a comprehensive or an oral examination by members of both departments at the end of the program of studies. This proposed course of studies must then be submitted to the dean of the College, with whose approval it may be signed and filed in his office.

Upon successful completion of the major requirements so specified, the student will graduate in the subject field specified on the program proposal.

COMBINED MAJORS

In addition to the basic fourteen departmental majors, students may elect a combined major that has been approved by the faculty. Such combined majors are prescribed courses of study involving required and/or elective courses in two or more academic departments. Each has its own faculty advisor. The following combined majors are available: American public policy, international relations, applied mathematics/economics. See page 130 for course requirements in these combined majors.

INTERNSHIPS

In some departments, students may pursue off-campus internships. These are an academic/work experience under the supervision of an academic adviser and an on-site supervisor.

Juniors and seniors, who have demonstrated responsibility, independence and maturity, and who have a minimum of nine credits in the area of the internship, are eligible. An internship involves at least eight to 12 hours per week for one semester at a job site, and carries three credit hours. Students may receive credit for only one internship. Internships are graded in the same manner as any other course; the grades are based primarily on reading, job performance, and a paper.

Any student engaged in an internship must have a faculty internship adviser who will make on-site visits and grade the project.

The primary responsibility for initiating an internship lies with the students. Students must define the educational objectives of the internship, provide a description of the project, a reading list, and get written approval from the on-site supervisor and from the faculty internship adviser. If the students meet the College and departmental requirements and have the approval of a faculty internship adviser, they file a written internship agreement with the department internship coordinator and with the dean's office, and register under the appropriate course number.

Interested students should contact the internship coordinator in the appropriate departments. Those departments with internships and the internship adviser are listed below.

Biology, Professor Allen; chemistry, Professor Staiger; communication arts, Professor Henry; economics and business administration, Professor Lentz; education, Professor O'Brien; English, Professor Perreten; health, physical education and recreation, Professor Davidson; history, Professor Doughty; modern languages, Professor Lucas; political science, Professor Fitzpatrick; psychology, Professor Chambliss.

WASHINGTON SEMESTER

Ursinus is one of more than 200 institutions participating in the Washington Semester Program, a cooperative arrangement conducted by American University in Washington, D.C. The program offers several specializations, including the National Government and Politics Semester, the Washington Urban Semester, the Economic Policy Semester, the Justice Semester, the Foreign Policy Semester, and the Journalism Semester. These programs give selected juniors and seniors an opportunity to work with people and resources in the nation's capital so as to understand better the dynamics of American politics and policymaking.

Under the direction of full-time faculty from American University, students participate in seminars with governmental officials, lobbyists, and media representatives; they arrange an internship with one of the three branches of the national government, political parties, interest groups, research organizations, or the media; and they complete a major research project on a current issue or policy problem. To be competitive candidates for selection, students should have a firm grounding in the area they wish to study.

Interested students should contact Dr. Fitzpatrick (Political Science).

CAPITAL SEMESTER

The Capital Semester Internship is sponsored by the Pennsylvania Department of Education and the Office of Administration. It offers juniors and seniors who are Pennsylvania residents an opportunity to apply classroom knowledge in internships in state government-related agencies in Harrisburg. Placements are available in wide variety of fields, including accounting, business, communications, education, health, law, public welfare, and taxation.

In consultation with a faculty adviser, participating students prepare a substantial reading list and detailed outline of a major research project to which the reading would be directed. The project, researched at the internship site, is presented to the faculty adviser by means of a major paper. In addition, students are required to maintain a journal and to participate in a series of seminars at their placement sites.

Interested students should contact Dr. Fitzpatrick (Political Science).

PHILADELPHIA URBAN SEMESTER

The Philadelphia Urban Semester is an interdisciplinary liberal arts program offering qualified sophomores, juniors, and seniors experiential as well as academic learning within an urban setting. Operated by the Great Lakes College Association, a consortium of 12 liberal arts colleges, the program helps students identify areas of personal, professional, and educational interest while developing independent living skills and an understanding of urban life.

In consultation with the program's full-time faculty, students participate in an array of courses and seminars and select a supervised field placement from a list of more than 500 involving the arts, business, communications, education, health care, law, politics, and social work. The internship provides the foundation for a substantial research project. Colloquia, workshops, and field trips are also available, as are lectures, conferences, and other special events in the city.

Interested students should contact Dr. Fitzpatrick (Political Science).

CRITICAL LANGUAGES PROGRAM

Highly motivated students interested in doing work in languages not currently offered in the regular curriculum are advised to investigate the opportunity for such study through College Scholars or the Critical Languages Program. In the Critical Languages Program initial emphasis is on the spoken language. As the student progresses, skill in reading and writing is also developed. The program requires 12 to 14 hours per week of self-instruction, using tape recorded materials coordinated with the text, and a minimum of two hours per week of small group tutorial sessions with a native speaker of the language. At the end of each term, an outside specialist examines the student and evaluates the work covered during the semester. Ursinus College is a member of the National Association of Self-Instructional Language Programs. Students who are interested in the program and who successfully have studied another foreign language should consult the program director.

SUMMER STUDY ABROAD

Ursinus offers summer programs in Japan and France. These courses are offered annually, mid-May to mid-June. The summer study in Japan is offered in collaboration with Tohoku Gakuin University in Sendai, Japan. The summer study in France includes study in Paris, Avignon, Aix-en-Provence, and Nice.

COMPLEMENTARY PROGRAMS

CULTURAL ACTIVITIES

Every full-time student is required to participate in cultural activities at Ursinus College. The activities are planned in a four-year cycle of emphasis. They include the Forum Series, academic convocations, and related Forum Series activities such as field trips to museums, and other complementary activities.

STUDENT ACTIVITIES

Every student is encouraged to participate in those student activities which provide opportunities for integrating perspectives and content of several disciplines and courses within the major division of learning. While students are not restricted to participation in activities related to their divisional or departmental fields, the following listing will assist students in seeing those relationships:

Humanities Division:

Meistersingers
Ursinus College Choir
Ursinus College Band
proTheatre
Grizzly Staff
Lantern Staff
Ruby Staff
Photography Club
French Club
German Club
Spanish Club
Forensic Society (Debating Club)
Radio Station WVOU
International Experience Club
Es Deitsch Freindschaft

Social Science Division:

Economics Club
Haines-Bernard Pre-Legal Society
Political Science Association
Psychology Club
G. Leslie Omwake Education Club
Ursinus Student Government
Association
Campus Activities Board
International Relations Club

Science and Mathematics Division:

Beardwood Chemical Society
Brownback Anders Pre-Medical
Society
Mathematics Club
Biology Club
Computer Society Club

COURSES OF INSTRUCTION

The system used in numbering courses reflects in general the year of the college in which many students schedule a course. Thus a course taken in the first year normally will begin with the number 1, in the second year with a 2, and so on. Numbers do not indicate the year in which a course *must* or *should* be taken. Any specific prerequisites or other considerations for enrolling are stated in the course description.

In designating courses of study, *odd* numerals are employed to indicate the courses normally offered during the fall term and even numerals the work of the spring term. Exceptions to this regulation are noted. Summer School offerings are not announced in this catalog, but as far as possible, courses will be offered to meet the needs of students who register for the Summer School.

The credit value of each course, expressed in semester hours, is printed in italics. The hours per week are given in the definition of the course.

AMERICAN PUBLIC POLICY

See Combined Majors

003—ANTHROPOLOGY

Assistant Professor GALLAGHER (*Chairman*); Adjunct Professor VAN NESS

Anthropology is by definition and scope an interdisciplinary subject which addresses itself holistically to the study of man from many places and many periods of time. Anthropology encompasses four distinct but interconnected fields of study: physical or biological anthropology; social and cultural anthropology; prehistoric archaeology; and linguistic anthropology. The goal of the department is to help the student to understand what it means to be human and to understand our own value system through an exposure to the systems of others.

The department of anthropology offers courses leading to a minor concentration in anthropology. The requirements for the minor are a minimum of 15 semester hours in anthropology. The minor must include at least two 200 level courses and one 400 level course.

003—101. INTRODUCTION TO SOCIOCULTURAL AND LINGUISTIC ANTHROPOLOGY

DR. GALLAGHER

This course provides a survey of alternative ways of dealing with human needs while viewing people as social beings. The emphasis is on family patterns, kinship relationships, political organization, economic systems, religion, and language as a cultural system. This course is offered in the fall semester of each year. Three hours per week. *Three semester hours.*

003—102. INTRODUCTION TO PHYSICAL ANTHROPOLOGY AND PREHISTORIC ARCHAEOLOGY

DR. GALLAGHER

This course surveys anthropological analysis of human biological nature and human prehistory. Attention will be given to human evolution, issues of race, primate studies, and the reconstruction of life styles of extinct, non-literate populations. This course is offered in the spring semester of each year. Three hours per week. *Three semester hours.*

003—211. PEOPLES OF LATIN AMERICA

DR. GALLAGHER

This course presents an overview of the cultures and institutions of the prehistoric, historic, and contemporary populations of Latin America. Special consideration will be given to the relationship between indigenous and immigrant populations. This course is offered in the fall semester of even numbered years. Prerequisite: Anthropology 101 or consent of the instructor. Three hours per week. *Three semester hours.*

***003—222. NORTH AMERICAN INDIANS** DR. GALLAGHER

In an examination of various American Indian cultures north of Mexico, emphasis will be placed upon social and political organization, religion and value systems, and acculturation. This course is offered in the spring semester of even numbered years. Prerequisites, Anthropology 101. Three hours per week. *Three semester hours.*

003—232. PEOPLES OF THE PACIFIC DR. GALLAGHER

A study of the indigenous societies of Australia, Melanesia, Micronesia, and Polynesia focuses on social and political organization, religion, art, and the changes resulting from European contact and colonization. This course is offered in the spring semester of odd numbered years. Prerequisites, Anthropology 101. Three hours per week. *Three semester hours.*

003—252. AMERICAN ETHNIC GROUPS DR. VAN NESS

This course focuses on ethnic patterns of community social life in urban, suburban, and rural settings. It explores the range and diversity of American ethnic subcultures. It also studies the processes of assimilation and diversification of ethnic groups in the national political, economic and cultural framework. This course is offered in the spring semester each year. Prerequisites, Anthropology 101 or Sociology 101. Three hours per week. *Three semester hours.*

003—451. RESEARCH STAFF

This course comprises directed reading and research on a specific anthropological topic. Students wishing to register in this course must present to the adviser for this research a proposal outlining the research to be completed. The proposal must be approved by the adviser. At regular intervals during the semester, students submit progress outlines and meet with the adviser to discuss them. A final paper will be required. Prerequisites, Anthropology 101 and two 200 level anthropology courses. *Three semester hours.*

Seminars will be offered when sufficient interest is shown.

003—461. SEMINAR IN ANTHROPOLOGY STAFF

Seminars will deal with special topics in anthropology. The topics may be either a concentrated look at a major subdiscipline within anthropology (e.g., economic anthropology, linguistic anthropology, or archaeology), or an analysis of various theoretical perspectives. Prerequisites, Anthropology 101 and one 200 level anthropology course. Three hours per week. *Three semester hours.*

APPLIED MATHEMATICS/ECONOMICS

See Combined Majors

ART

See Fine Arts

005—BIOLOGY

Professor ALLEN (Chairman); Associate Professors FIELDS, KRUSE, SHINEHOUSE, SIDIE, SMALL; Lecturer WHITTAKER

The department aims, through study of the fundamental aspects of biology as a science, to foster in its students a scientific attitude, and to provide for its majors a firm foundation of knowledge for various biologically-related occupations, for graduate work in biology or for admission to professional schools in the several fields of medicine and related health services. The department also participates in a program leading to teacher certification in secondary schools as described below.

*This course is not offered in 1986-1987.

All students majoring in biology must accumulate a minimum of 32 semester hours of biology which includes the core curriculum. Except as specified in the teacher certification program (see below), the core curriculum consists of Biology 111, 112; 215 and one course from each of the following divisions: cellular biology (Biology 216, 418, 422, 425, 431); animal biology (Biology 312, 317, 318, 330, 335, 426); plant biology (Biology 333, 334, 428). Chemistry 111, 112, and 207, 208, Physics 111, 112 and Mathematics 111, 112 are also required of all majors.

A minor concentration in biology consists of Biology 111, 112 and at least nine additional credit or Biology 101, 102 and at least twelve (12) additional credits (excluding one credit courses) in biology above the 100 level.

See Psychology (075) for the minor in Neuroscience.

SPECIAL CAREER INTERESTS

- I. Students seeking admission to schools of medicine, dentistry, veterinary medicine, optometry and podiatry should note the following:
 1. At least one additional course in chemistry (e.g. Chemistry 203, 309, 315) is strongly recommended.
 2. Biology electives should be chosen in accordance with professional objectives.
- II. Students seeking admission to graduate programs in biologically-related fields should note the following:
 1. At least one additional course in chemistry is recommended, to be selected in accordance with graduate objectives.
 2. Mathematics 241, 242 is recommended.
 3. Mathematics 271 is recommended.
 4. Biology electives should be chosen in accordance with the major area of interest.
- III. Prospective secondary school teachers whose interest is biology and who wish to be certified in biological science should note the following:
 1. One of the following courses is required from the division of animal biology: Biology 312, Biology 317 or Biology 318.
 2. The required course from the division of plant biology must be Biology 334 or 428.
 3. Biology 415 is required.
 4. Simultaneous certification in general science (see general science certification at the back of the catalog) is highly recommended.
 5. It is highly recommended that prospective teachers serve at least one semester as departmental teaching assistants.
 6. The curriculum beyond the first year must be arranged in consultation with the chairman of the department of education.
- IV. Students who plan to terminate their formal education at the baccalaureate level should note the following:
 1. Mathematics 241, 242, and 271 are strongly recommended.
 2. Economics and business administration 101, 102, and 111, 112 are recommended.
 3. TIER III and TIER IV courses should be selected in accordance with occupational interests.

005—101. INTRODUCTION TO BIOLOGICAL SCIENCE MRS. WHITTAKER

An introduction to the principles of structure, function and development of living organisms. Major topics of discussion include the chemical and cellular basis of life, organismal systems, and the interrelationship of living organisms. Two hours of lecture; two hours of laboratory per week. *Three semester hours.*

COURSES OF INSTRUCTION

005—102. *INTRODUCTION TO BIOLOGICAL SCIENCE* MRS. WHITTAKER

An introduction to the principles of structure, function and development of living organisms. Major topics of discussion include genetics, the plant kingdom, behavior, evolution and ecology. Two hours of lecture; two hours of laboratory per week. *Three semester hours.*

005—111. *GENERAL BIOLOGY* DR. SIDIE

An introduction to biology, stressing structure and function. Topics include cell structure, cell energetics, the animal kingdom, digestion, respiration, circulation, hormones and reproduction. Laboratory includes experimental exercises and a study of representative organisms. Pre- or co-requisite, Chemistry 111. Three hours of lecture; three hours of laboratory per week. *Four semester hours.*

005—112. *GENERAL BIOLOGY* DR. SIDIE

A continuation of Biology 111. Topics include genetics, development, the plant kingdom, the nervous system, muscular contraction, animal behavior, ecology and evolution. Laboratory includes experimental exercises and a study of representative organisms. Prerequisite, Biology 111. Pre- or corequisite, Chemistry 112. Three hours of lecture; three hours of laboratory per week. *Four semester hours.*

NOTE: Courses 005-111, 112 are the basic introductory courses required of all biology majors and for any others who are planning to meet the various pre-professional requirements in the health sciences.

005—215. *GENETICS* DR. FIELDS

A survey of the basic principles of classical, molecular, biochemical and population genetics using a variety of organisms to illustrate the experimental rationale of the genetic problem. Prerequisite, Biology 112, or permission of the instructor. Three hours of lecture; two hours of laboratory per week. *Four semester hours.*

005—216. *CYTOLOGY* DR. FIELDS

A study of the fine structure of prokaryotic and eukaryotic cells and the molecular and supermolecular organization and function of cell organelles. Prerequisite, Biology 112 or permission of the instructor. Three hours of lecture per week. *Three semester hours.*

005—223. *EVOLUTION* DR. KRUSE

Lectures, assigned reading and papers explaining the history of living things in space and time. Prerequisite, Biology 102 or 112. Two hours per week. *Two semester hours.*

005—312. *VERTEBRATE ANATOMY* DR. ALLEN

A comparative study of body structure and its evolution in the major groups of vertebrate animals. Laboratory dissection of the bony fish, shark, and mammal. Prerequisite, Biology 112. Three hours of lecture; four hours of laboratory per week. *Four semester hours.*

005—317. *HUMAN ANATOMY AND PHYSIOLOGY* MRS. SHINEHOUSE

A study of the characteristics of cells and tissues, and the muscular, skeletal and nervous systems. Emphasis is placed on the integration of structure and function. Prerequisite, Biology 101 or 111; or permission of the instructor. Three hours of lecture; two hours of laboratory per week. *Four semester hours.*

005—318. *HUMAN ANATOMY AND PHYSIOLOGY* MRS. SHINEHOUSE

A study of the structure and function of the sense organs, and of the circulatory, respiratory, urinary, digestive, endocrine and reproductive systems. Prerequisite, Biology 317, or permission of the instructor. Three hours of lecture; two hours of laboratory per week. *Four semester hours.*

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005—330. *BEHAVIORAL BIOLOGY* DR. SIDIE

A study of the biological basis of behavior. Topics include the neural and hormonal basis of behavior, orientation mechanisms, biological clocks, animal communication, learning, sociobiology and the evolution of behavior. Prerequisite, Biology 102 or 112; or permission of the instructor. Three hours of lecture per week. *Three semester hours.*

005—333. *BIOLOGY OF THE NON-VASCULAR PLANTS* DR. FIELDS

A phylogenetic survey of the non-vascular plants, with emphasis on identification, morphological and evolutionary trends, and isolation and culture techniques. Prerequisite, Biology 112. Two hours of lecture; three hours of laboratory per week. *Three semester hours.*

NOTE: Limitations in space or laboratory facilities preclude the enrollment of more than 20 students in Biology 333.

005—334. *BIOLOGY OF THE VASCULAR PLANTS* DR. SMALL

A survey of the morphology and evolution of the vascular plants, including the principles, theory and methodology underlying modern taxonomic systems. Available field time centers upon the morphology and taxonomy of the local vascular flora. Prerequisite, Biology 112. Two hours of lecture; three hours of laboratory per week. *Three semester hours.*

NOTE: Limitations in space or laboratory facilities preclude the enrollment of more than 20 students in Biology 334.

005—335. *ANALYSIS OF DEVELOPMENT* DR. ALLEN

Investigation of the mechanisms that bring about the differentiation of cells and their subsequent organization into tissues, organs and organ systems. Laboratory work stresses the development of vertebrate morphology. Prerequisite, Biology 215. Three hours of lecture; four hours of laboratory per week. *Four semester hours.*

005—341. *RESEARCH* STAFF

Scientific literature research with the preparation of a final report concerning some biological phenomenon of interest to the student. Prerequisites, Biology 112 and written consent of a staff member who will serve as research adviser, presented at the time of preregistration. *One semester hour.*

005—342. *RESEARCH* STAFF

Content and prerequisites as in Biology 341, but offered in the spring term. *One semester hour.*

005—350. *SELECTED TOPICS IN BIOLOGY* STAFF

A course offered periodically in an area of special interest to students by a staff member or a visiting lecturer. Prerequisite, permission of the instructor. Three hours per week. *Three semester hours.*

005—381. *INTERNSHIP* STAFF

An off-campus academic/work experience under the supervision of an internship adviser and an on-site supervisor. Contact the chairman of the department for further details. Prerequisite, junior standing, nine credits in biology, and approval of a faculty internship adviser. Eight to 10 hours per week. *Three semester hours.*

COURSES OF INSTRUCTION

005—415. *ECOLOGY*

DR. SMALL

Studies of the interrelationships between organisms and their environment, with emphasis on field investigations. The following principles and concepts are stressed; energy relations, population dynamics, the community, succession and environmental effects. Prerequisite, Biology 102 or 112. Two hours of lecture, three hours of laboratory per week. *Three semester hours.*

NOTE: Limitations in space or laboratory facilities preclude the enrollment of more than 32 students in Biology 415.

005—418. *MICROBIOLOGY*

DR. KRUSE

The structural, cultural, and physiological characteristics of microorganisms and their role in the economy of nature. The principles of immunology; serology and virology are also considered. Prerequisite, Biology 112; or permission of the instructor. Two hours of lecture; three hours of laboratory per week. *Three semester hours.*

005—422. *HISTOLOGY*

MRS. SHINEHOUSE

A study of the structure of vertebrate tissues and their integration into organs and organ systems. An introduction to histological technique. Prerequisite, Biology 112; or permission of the instructor. Two hours of lecture; five hours of laboratory per week. *Four semester hours.*

NOTE: Limitations in space or laboratory facilities preclude the enrollment of more than 40 students in Biology 422.

005—425. *CELLULAR PHYSIOLOGY*

DR. KRUSE

A study of the phenomena involved in cell growth, maintenance, self-regulation and in the general behavior of protoplasm. Prerequisites, Biology 112; Chemistry 208. Two hours of lecture; four hours of laboratory per week. *Four semester hours.*

NOTE: Limitations in space or laboratory facilities preclude the enrollment of more than 16 students in Biology 425.

005—426. *VERTEBRATE PHYSIOLOGY*

DR. KRUSE

A study of the general principles of the functional mechanisms that underlie the life processes of vertebrates. Prerequisites, Biology 112; Chemistry 208. Two hours of lecture; four hours of laboratory per week. *Four semester hours.*

NOTE: Limitations in space or laboratory facilities preclude the enrollment of more than 20 students in Biology 426.

005—428. *PLANT PHYSIOLOGY*

DR. FIELDS

A study of life processes of green plants and the environmental factors that regulate them. Experiments will illustrate physiological concepts. Prerequisites, Biology 112; Chemistry 208. Two hours of lecture; three hours of laboratory per week. *Three semester hours.*

NOTE: Limitations in space or laboratory facilities preclude the enrollment of more than 12 students in Biology 428.

005—431. *NEUROBIOLOGY*

DR. SIDIE

Biophysics of excitable membranes, physiology of synapses, sensory receptors, integrative neurophysiology, neuromuscular systems, excitation-secretion coupling, the coding of neural information. Prerequisites, Physics 112, Biology 112, Biology 425; or permission of the instructor. Three hours of lectures; three hours of laboratory per week. *Four semester hours.*

NOTE: Limitations in space or laboratory facilities preclude enrollment of more than 20 students in Biology 431.

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- 005—473. *SEMINAR* STAFF
Papers, reports, discussions and/or independent research concerned with selected phases of biological knowledge. Topics to be chosen by the instructor in charge. Prerequisites, Senior standing; Biology 215, 312, Chemistry 208; or permission of the instructor. One hour per week. *One semester hour.*
- 005—474. *SEMINAR* STAFF
Comparable to Biology 473, but using different material. Prerequisites as in Biology 473. One hour per week. *One semester hour.*
- 005—481. *RESEARCH* STAFF
Library and laboratory research with the preparation of a final thesis. An original laboratory or field analysis of some biological phenomenon and presentation of results in a student-staff seminar. Prerequisites, Biology 112 and written consent of a staff member who will serve as research adviser, presented at the time of pre-registration. *Three semester hours.*
- 005—482. *RESEARCH* STAFF
Content and prerequisites as in Biology 481, but offered in the spring term. *Three semester hours.*
- 005—491. *RESEARCH/INDEPENDENT WORK* STAFF
Open only to candidates for departmental honors. *Three semester hours.*
- 005—492. *RESEARCH/INDEPENDENT WORK* STAFF
Open only to candidates for departmental honors. *Three semester hours.*

BUSINESS ADMINISTRATION

See Economics and Business Administration

010—CHEMISTRY

Professors HESS, SCHULTZ, STAIGER (*Chairman*); *Associate Professor* BARTH; *Assistant Professor* TORTORELLI; *Instructor* SHAW.

The chemistry department at Ursinus College has been accredited by the American Chemical Society since 1959.

The objectives of the department are (1) to offer specialized training in chemistry, beyond the basic course, that will enable a graduate to enter a career as a professional chemist; (2) to prepare the student for graduate study; (3) to provide a strong foundation for the student planning to enter medicine, dentistry or an allied health field; (4) to prepare the student for teaching chemistry at the secondary level; (5) to provide courses which satisfy the departmental requirements for a comprehensive minor; (6) to provide a course in general chemistry which satisfies the natural science requirements of the College.

Recognizing that students have different educational objectives, the chemistry department offers several programs leading to a major. Students wishing to combine a chemistry major with a major/minor concentration in another academic department (economics, business administration, biology, physics, and others,) may enroll in any one of the following programs (tracks) in accordance with their career interests.

Track 1. Major Specialization in Chemistry

Students planning to enter the chemical industry or planning further study in chemically related areas (e.g. engineering, biochemistry, material science, and the like.) may enroll in this program. This specialization consists of the following courses central to the field of chemistry: Chemistry 111, 112, 203, 207, 208, 309, 309a, 310 and seven additional credits in chemistry, at least one of which must be laboratory credit.

Other courses necessary to complete the departmental requirements of this program are Mathematics 111, 112, 211; Physics 111, 112. A course in computer science (Mathematics 271) is recommended.

Track 2. American Chemical Society Accredited Major.

The American Chemical Society has adopted a set of standards for undergraduate training in chemistry. Students seeking accreditation must complete the following courses: Chemistry 111, 112, 203, 207, 208, 306, 309, 309a, 310, 310a, 401, and three additional credits in chemistry lecture electives and four additional credits in chemistry laboratory, only two of which can come from research or internship. Other courses necessary to complete the departmental requirements of this program are Mathematics 111, 112, 211; Physics 111, 112. A course in computer science (Mathematics 271) is recommended.

Track 3. Specialization in Chemistry for Medical School and Allied Fields.

This course of study is designed for students planning admission to professional schools in the healing arts (such as medicine and dentistry.) or further study in the health related fields. This program consists of the following courses: Chemistry 111, 112, 203, 207, 208, 309, 309a, 310, 310a; Biology 111, 112. Other courses necessary to complete the departmental requirements of this program are Mathematics 111, 112, 211 and Physics 111, 112.

Track 4. Specialization in Chemistry for Science Teaching

This program satisfies the Pennsylvania State requirements for secondary school certification in science-chemistry emphasis. Students seeking certification should enroll in the following: Chemistry 111, 112, 203, 207, 208 and an additional six credits in chemistry. Other courses necessary are Biology 111, 112; Mathematics 111, 112; Physics 111, 112, 204 and the prescribed education courses. A course in geology is recommended.

Minor Concentration

A minor concentration in chemistry consists of Chemistry 111, 112, 203, 207, 208, and one of the following: 306, 307, 309; Mathematics 111, 112; Physics 111, 112.

A student presenting six credits in general chemistry may satisfy the prerequisite for an advanced course by passing a written examination set by the faculty of the department.

Chemistry 101 and 102 are not open to chemistry majors but may be taken by other students to satisfy college graduation requirements.

010—101. GENERAL CHEMISTRY

MRS. SHAW

Basic chemical principles such as atomic structures, bonding, and oxidation-reduction are developed with emphasis on how these principles relate to daily life. Related laboratory work complements the classroom topics. Chemistry 101 is designed for the non-science major and does not satisfy the prerequisite for advanced chemistry courses. Two hours of lecture and three hours of laboratory per week. *Three semester hours.*

010—102. GENERAL CHEMISTRY

MRS. SHAW

A continuation of Chemistry 101. The principles developed in Chemistry 101 are used in discussion of pertinent current topics such as energy and food production, air and water pollution, drugs and medicines. Related laboratory work complements the classroom topics. Chemistry 102 is designed for the non-science major, and does not satisfy the prerequisite for advanced chemistry courses. Prerequisite, Chemistry 101. Two hours of lecture and three hours of laboratory per week. *Three semester hours.*

Chemistry 111, 112 are coordinated with Mathematics 111, 112 and Physics 111, 112 in such a way as to demonstrate their relationships and interdependence.

URSINUS COLLEGE CATALOG

- 010—111. *GENERAL COLLEGE CHEMISTRY* DR. STAIGER, MRS. SHAW
A study of the basic theories and laws of chemistry, concerning the common elements of the periodic system, their structures, interactions and energy relationships. This course is accompanied by work in the mathematical solution of chemical problems and is the prerequisite to advanced chemistry courses. Three hours of lecture and three hours of laboratory per week. *Four semester hours.*
- 010—112. *GENERAL COLLEGE CHEMISTRY* DR. STAIGER, MRS. SHAW
A continuation of Chemistry 111. A study of the oxidation states of the common elements, chemical equilibrium, solubility product and pH. The laboratory experimentation deals with the qualitative separation and characterization of the common cations and anions. Prerequisite, Chemistry 111. Three hours of lecture and three hours of laboratory per week. *Four semester hours.*
- 010—203. *QUANTITATIVE ANALYSIS* MISS BARTH
A study of commonly-used methods of gravimetric and volumetric analysis and an introduction to instrumentation. Emphasis is placed on equilibrium theory. Prerequisites, Chemistry 112, Mathematics 111, and Physics 111 (or concurrently). Three hours lecture and three hours of laboratory per week. *Four semester hours.*
- 010—204. *CHEMICAL INFORMATION SCIENCE* DR. TORTORELLI
The use of literature sources in the field of chemistry. Instruction in effective technical communication with emphasis on principles of scientific writing. Prerequisite, Chemistry 207. Three hours of lecture per week. *Three semester hours.*
- 010—207. *ORGANIC CHEMISTRY* DR. HESS
A study of the physical and chemical properties of the important classes of organic compounds within the context of modern structural theory. Areas emphasized are chemical bonding, acidity and basicity in organic systems, stereochemistry, spectrometric methods of analysis, and reaction mechanisms. Prerequisite, Chemistry 112. Three hours of lecture and three hours of laboratory per week. *Four semester hours.*
- 010—208. *ORGANIC CHEMISTRY* DR. HESS
A continuation of Chemistry 207. Particular emphasis is placed on structure-reactivity relationships and synthesis. Other topics include aromaticity, nuclear magnetic resonance spectroscopy, the chemistry of the carbonyl function and polymerization. Prerequisite, Chemistry 207. Three hours of lecture and three hours of laboratory per week. *Four semester hours.*
- 010—306. *INSTRUMENTAL ANALYSIS* MISS BARTH
A study of the theory and applications of modern instrumental analysis; electrochemistry, spectroscopy and chromatography. Prerequisites, Chemistry 203, 208. Three hours of lecture per week. *Three semester hours.*
- 010—306a. *LABORATORY IN INSTRUMENTAL ANALYSIS* MISS BARTH
Laboratory work related to Chemistry 306. This course must be taken concurrently with Chemistry 306. Three hours per week. *One semester hour.*
- 010—307. *MODERN APPLICATIONS OF ANALYTICAL CHEMISTRY* MISS BARTH
A study of experimental design and applications to various methods in analytical chemistry. Topics will vary from year to year and may include separation methods, modern electronics, laboratory automation and the use of the computer in chemistry. Prerequisites, Chemistry 203, 208. Three hours of lecture per week. *Three semester hours.*

COURSES OF INSTRUCTION

010—309. *PHYSICAL CHEMISTRY* DR. SCHULTZ

A study of the fundamental laws of thermodynamics as applied to chemical systems. Areas emphasized include chemical equilibrium, chemical kinetics, and surface chemistry. Prerequisites, Chemistry 112, Mathematics 211. Three hours of lecture per week. *Three semester hours.*

010—309a. *LABORATORY IN PHYSICAL CHEMISTRY* DR. SCHULTZ

Laboratory work related to Chemistry 309. Prerequisites (or concurrently), Chemistry 203, 309. Three hours per week. *One semester hour.*

010—310. *PHYSICAL CHEMISTRY* DR. SCHULTZ

A continuation of Chemistry 309. A study of quantum mechanics and its application to chemical properties. Other areas included are phase diagrams and molecular structure determination. Prerequisite, Chemistry 309. Three hours of lecture per week. *Three semester hours.*

010—310a. *LABORATORY IN PHYSICAL CHEMISTRY* DR. SCHULTZ

Laboratory work related to Chemistry 310. Prerequisite, Chemistry 310 (or concurrently). Three hours per week. *One semester hour.*

010—311. *THE IDENTIFICATION OF ORGANIC COMPOUNDS* DR. TORTORELLI

Identification based on physical, chemical and spectrometric properties of organic compounds. The theory of modern spectrometric methods of organic analysis will be discussed. Prerequisite, Chemistry 208. Three hours of lecture per week. *Three semester hours.*

010—311a. *LABORATORY IN THE IDENTIFICATION OF ORGANIC COMPOUNDS* DR. TORTORELLI

The physical, chemical and spectroscopic analysis of organic molecules and the preparation of chemical derivatives. Prerequisite, Chemistry 311 (or concurrently). Three hours per week. *One semester hour.*

010—315. *BIOCHEMISTRY* DR. TORTORELLI

The study of the properties, structure, synthesis, and metabolism of carbohydrates, proteins, lipids, and nucleic acids; biological oxidations; enzyme catalysis; the chemistry of selected physiological processes. Prerequisite, Chemistry 208. Three hours of lecture per week. *Three semester hours.*

010—381. *INTERNSHIP* STAFF

A laboratory project in cooperation with industry at an industrial site involving a minimum of ten hours per week for one semester or four weeks of full-time work. Before beginning the internship the student must submit a proposal that has been approved by both the chemistry faculty and the on-site supervisor. Upon completion of the work a written report detailing the complete scope and results of the project must be submitted to the department. Prerequisites, Chemistry 203, 204, 208. *Three semester hours.*

010—401. *STRUCTURE AND BONDING OF CHEMICAL COMPOUNDS* MISS BARTH, DR. TORTORELLI

A study of bonding theories, applications of group theory, molecular spectroscopy, and the stereochemistry of chemical compounds. Prerequisite, Chemistry 309 (or concurrently). Three hours of lecture per week. *Three semester hours.*

010—402. *REACTIVITY OF CHEMICAL COMPOUNDS* MISS BARTH, DR. TORTORELLI

A survey of various methods used to elucidate reaction mechanisms, including thermodynamic studies of chemical transformations, and an investigation of the theories governing the reactivity of chemical compounds. Prerequisite, Chemistry 310 (or concurrently). Three hours of lecture per week. *Three semester hours.*

010—412. *POLYMER CHEMISTRY* DR. SCHULTZ

A study of the synthesis, structure and properties of polymers. Topics include polymerization methods and kinetics, determination of molecular weight and its distribution, mechanical properties, and polymer processing. Prerequisite, Chemistry 208, 309. Three hours of lecture per week. *Three semester hours.*

010—482. *ADVANCED LABORATORY METHODS* DR. SCHULTZ, DR. TORTORELLI

Biochemical, inorganic, organic, physical and polymer chemistry concepts integrated in a broad laboratory study of structure and reactivity. Prerequisites, Chemistry 208, 309a. Six hours per week. *Two semester hours.*

010—491. *RESEARCH/INDEPENDENT WORK* STAFF

Independent library and laboratory investigation of an area of chemistry with oral progress reports to the department faculty and a thesis. Written consent of the research advisor and the department staff presented at the time of registration is required. Prerequisites, Chemistry 204, 208, and either 306a or 309a (or concurrently). Nine hours per week. *Three semester hours.*

010—492. *RESEARCH/INDEPENDENT WORK* STAFF

Content as in 491. Prerequisites, Chemistry 204, 208, and either 306a (or concurrently) or 309a. Nine hours per week. *Three semester hours.*

DEPARTMENTAL HONORS IN CHEMISTRY

Students successfully completing Chemistry 491, 492 may be awarded honors in chemistry, but no additional credit will be granted. description of the honors program, including qualifications, is detailed in this catalog under the Ursinus Plan.

CLASSICAL STUDIES

Associate Professor WICKERSHAM, (Chairman)

Courses in the department of classical studies are intended to develop reading ability in ancient Greek and Latin, and to introduce the student to the major forms of ancient literary expression; they enhance general linguistic facility and give the student direct access to the original documents of Western civilization.

Majors must take at least 12 semester hours of Greek, and 12 semester hours of Latin above Latin 102. Latin 301 is required and Majors must also include among their electives History 101, 102 and elect at least 9 semester hours from the following major-related courses: English 320-326 (classics in translation), 214 (linguistics); Anthropology 101, 102 (introduction to social and physical anthropology); History 319 (ancient Near East and Greece); 320 (Rome), 321, (Byzantium); Fine Arts 311, 312 (history of art); Philosophy 101, 102 (history of philosophy), 103 (general problems of philosophy), 105, 106 (logic), 108 (aesthetics); World Literature 201, 202 (western literature). Other courses not mentioned may be counted as major-related with the approval of the department.

Those intending to teach Greek or Latin in the public schools are urged to acquire state certification through the department of education.

A minor concentration in classical studies consists of a minimum of 12 credits in Greek and Latin courses to, at least, the 204 level; six credits either in classics in translation (Literature 320, 322, 324, or 326), or in ancient history (History 319 and 320).

A minor concentration in Greek consists of 15 credits in Greek, and three credits in classics in translation (Literature 320, 322, 324, or 326).

A minor concentration in Latin consists of 15 credits in Latin; and three credits in classics in translation (Literature 320, 322, 324, or 326).

016—GREEK

016—101. *ELEMENTARY GREEK* DR. WICKERSHAM
Thorough study of ancient Greek grammar and syntax. Practice in reading and composition. Emphasis on development of reading ability. Forms a unit with Greek 102. Three hours per week. *Three semester hours.*

016—102. *ELEMENTARY GREEK* DR. WICKERSHAM
Continuation of Greek 101. Study of grammar completed and replaced by reading of a whole work, such as a play of Euripides, Xenophon's *Anabasis I*, or a book of the New Testament. Three hours per week. *Three semester hours.*

016—203. *ATTIC PROSE* DR. WICKERSHAM
Plato's *Apology* and other texts concerning Socrates. Prerequisites, Greek 102 or equivalent. Three hours per week. *Three semester hours.*

016—204. *THE EPIC* DR. WICKERSHAM
Large excerpts from the *Iliad* or *Odyssey*. Study of Homer's poetry and thought. Introduction to history of the Greek language, with special attention to phonology. Foundations of Western literature. Prerequisites, Greek 203 or equivalent. Three hours per week. *Three semester hours.*

The following advanced courses will be given according to students' needs and interests; consult with the instructor concerning available offerings.

016—208. *NEW TESTAMENT* DR. WICKERSHAM
At least one book of this important record. Three hours per week. *Three semester hours.*

016—301. *DRAMA* DR. WICKERSHAM
Reading and study of Sophocles' *Oedipus the King*, plus one other tragedy by Sophocles, Aeschylus, or Euripides, or a comedy by Aristophanes or Menander. Three hours per week. *Three semester hours.*

016—302. *HISTORICAL WRITERS* DR. WICKERSHAM
Large excerpts from Herodotus' *Persian Wars*, Thucydides' *Peloponnesian War*, or Xenophon's *Greek History*. Three hours per week. *Three semester hours.*

016—303. *SELECTED TOPICS* DR. WICKERSHAM
Content variable, concentration on author, period, genre and the like. Three hours per week. *Three semester hours.*

016—304. *SELECTED TOPICS* DR. WICKERSHAM
Three hours per week. *Three semester hours.*

016—401. *SEMINAR* DR. WICKERSHAM
Seminars of varying content, concentrating on a topic, author, or genre. Three hours per week. *Three semester hours.*

016—402. *SEMINAR* DR. WICKERSHAM
Seminars of varying content, concentration on a topic, author, or genre. Three hours per week. *Three semester hours.*

016—491. *RESEARCH/INDEPENDENT WORK* DR. WICKERSHAM
This course is open to candidates for departmental honors and to other students with the permission of the department chairman. *Three semester hours.*

016—492. *RESEARCH/INDEPENDENT WORK* DR. WICKERSHAM
A continuation of course 491. Prerequisite, course 491. *Three semester hours.*

017—LATIN

- 017—101. *ELEMENTARY LATIN* DR. WICKERSHAM
 Instant production of reading ability, with ever-growing development of vocabulary and style. Forms unit with Latin 102. Three hours per week. *Three semester hours.*
- 017—102. *ELEMENTARY LATIN* DR. WICKERSHAM
 Continuation of Latin 101. All aspects of classical Latin are covered; readings depict wide variety of Roman life. Three hours per week. *Three semester hours.*
- 017—203. *INTERMEDIATE LATIN* DR. WICKERSHAM
 Review of elementary Latin. Carefully programmed readings cover topography of Rome, and early Roman legends and history down through the first Punic War. Three hours per week. *Three semester hours.*
- 017—204. *INTERMEDIATE LATIN* DR. WICKERSHAM
 Continues Latin 203. Practice and review, and transition to reading from original sources taking Roman history through the growth of the empire. Three hours per week. *Three semester hours.*
- The sequence Latin 101—204 is recommended for fulfilling the foreign language requirement.
- The following advanced courses will be offered as suits the needs and interests of students. Consult with the instructor concerning available offerings.
- 017—301. *THE LATIN LANGUAGE* DR. WICKERSHAM
 Detailed study of Latin vocabulary, morphology and syntax. Introduction to comparative linguistics. Survey of documents and literature from the origins to the present. Required for Classical Studies majors. Prerequisite, Latin 204, equivalent, or permission. Three hours per week. *Three semester hours.*
- 017—302. *INTRODUCTION TO LATIN POETRY* DR. WICKERSHAM
 Poems of Catullus, Ovid, Tibullus, Propertius. Stress on developing sensitivity and canons of appreciation. Three hours per week. *Three semester hours.*
- 017—303. *HISTORICAL WRITERS* DR. WICKERSHAM
 Caesar, Suetonius, or Tacitus. Three hours per week. *Three semester hours.*
- 017—304. *THE ROMAN REVOLUTION* DR. WICKERSHAM
 Speeches and letters of Cicero, and other contemporary documents. Three hours per week. *Three semester hours.*
- 017—305. *VERGIL'S AENEID* DR. WICKERSHAM
 Paganism transcended. Three hours per week. *Three semester hours.*
- 017—307. *SELECTED TOPICS* DR. WICKERSHAM
 Content variable, concentration on author, period, genre and the like. Three hours per week. *Three semester hours.*
- 017—308. *SELECTED TOPICS* DR. WICKERSHAM
 Three hours per week. *Three semester hours.*
- 017—401. *SEMINAR* DR. WICKERSHAM
 Seminars of changing content, for study of special topics, authors, genres. Three hours per week. *Three semester hours.*
- 017—402. *SEMINAR* DR. WICKERSHAM
 Seminars of changing content, for study of special topics, authors, genres. Three hours per week. *Three semester hours.*

COURSES OF INSTRUCTION

017—491. *RESEARCH—INDEPENDENT WORK* DR. WICKERSHAM

This course is open to candidates for departmental honors and to other students with the permission of the department chairman. *Three semester hours.*

017—492. *RESEARCH—INDEPENDENT WORK* DR. WICKERSHAM

A continuation of course 491. Prerequisite, course 491.

077—COMMUNICATION ARTS

Associate Professors HENRY (*Chairman*), MILLER; Lecturer, CZUBAROFF.

The general purpose of the communication arts courses is to offer a scholarly and systematic approach to an understanding of communicative acts of our society.

The minor in communications arts is designed to support students in their major areas of study. The faculty believes that coursework and experience in the various fields of communication, coupled with a broad liberal arts background, strengthen the preparation for professions that require both a theoretical and a pragmatic knowledge, such as advertising, the arts, broadcasting, education, industrial management, journalism, law, marketing, public relations, and social service.

A minor concentration consists of a minimum of 18 hours of credit in communication arts, including Communication Arts 200 and at least three courses from the 300 and 400 levels. Students may elect to substitute Fine Arts 101 and/or English 207 as part of the required number of hours for this minor.

077—200. *MASS MEDIA AND SOCIETY* DR. MILLER

An analytical and critical approach to the study of mass media, including radio, television, film and print. Three hours per week. *Three semester hours.*

077—201. *PUBLIC SPEAKING* STAFF

The composition and presentation of speeches that inform, teach and persuade, with group analysis and criticism. Three hours per week. *Three semester hours.* Enrollment limited to twenty students per section.

077—210. *INTRODUCTION TO TELEVISION* DR. HENRY, DR. MILLER

A comprehensive overview of the principles of television production. The course focuses upon the planning and structuring of studio productions, including pre-production techniques and directing. Enrollment limited to 15 students per section. Prerequisite: Communication Arts 200 or 201. Three hours per week. *Three semester hours.*

077-222. *ORAL INTERPRETATION* DR. HENRY

A study of the techniques necessary to communicate effectively the intellectual and emotional content of fictional and non-fictional material. Prerequisite: Communication Arts 201. Three hours per week. *Three semester hours.*

077—232. *ARGUMENTATION AND DEBATE* DR. CZUBAROFF

A study of the nature, structure, and criticism of argumentative discourse. Argumentation theory is learned through participation in cross examination, direct clash, and parliamentary debate. Students examine and practice their understanding of such concepts as case building, burden of proof, and presumption. Prerequisite, Comm. Arts 201. Three hours per week. *Three semester hours.*

077—252. *INTERPERSONAL COMMUNICATION* DR. CZUBAROFF

A study of the ways in which people generate meaning in interpersonal transactions through the use of language, space, gesture, sexuality, and time. Emphasis is placed on business, professional, and family interpersonal contexts. Prerequisite: Communications Arts 201. Three hours per week. *Three semester hours.*

*077—301. *THEATER WORKSHOP* DR. HENRY
 An introduction to the theater, with an emphasis upon acting techniques. Students will participate in acting exercises, scene study, and stagecraft and will gain practical experience in campus productions. Prerequisite: Communication Arts 201. Three hours per week. *Three semester hours.*

077—309. *INTERMEDIATE TELEVISION PRODUCTION* DR. MILLER
 The techniques of electronic field production. The course focuses upon script development, broadcast news writing, and post-production techniques including off-line electronic editing. Prerequisite: Communication Arts 210. Enrollment limited to 15. Three hours per week. *Three semester hours.*

077—310. *ADVANCED TELEVISION PRODUCTION* DR. MILLER
 A continuation of Communication Arts 309. Studio and field production techniques are combined for the production of programming on the local Cable television public access channel. Prerequisite: Communication Arts 309. Enrollment limited to 15. Three hours per week. *Three semester hours.*

077—381. *COMMUNICATION ARTS INTERNSHIP* STAFF
 An off-campus academic/work experience under the supervision of an internship adviser and an on-site supervisor. Prerequisites, junior standing, nine credits in communication arts, and approval of a faculty internship adviser. *Three semester hours.*

077—411. *PROJECTS IN COMMUNICATION ARTS* STAFF
 Advanced individual work on a special project related to theater, television, or journalism. Prerequisites, six credits of 300-400 level courses, a written project proposal, and permission of the instructor. *Three semester hours.*

077—412. *PROJECTS IN COMMUNICATION ARTS* STAFF
 Advanced individual work on a special project related to theater, television, or journalism. Prerequisites, six credits of 300-400 level courses, a written project proposal, and permission of the instructor. *Three semester hours.*

018—COMPUTER SCIENCE

See Mathematics and Computer Science

019—EAST ASIAN STUDIES

Professor DECATUR; Assistant Professor CLARK (Chairman); Instructor McQUAID, Lecturer KANAGY.

Acquaintance with cultures other than our own is an integral part of both a liberal arts curriculum and preparation for a career in a variety of fields including business, law, teaching or governments. The East Asian studies minor, an interdisciplinary program drawing on offerings from many departments but emphasizing history, language, literature and politics, is designed to provide such an introduction to the cultures of China and Japan.

In addition to the courses offered on the Ursinus campus, students are encouraged to take advantage of the Summer Study in Japan Program, offered in conjunction with Tohoku Gakuin University, our sister institution in Sendai, Japan. (Page 67.)

*This course is not offered in 1986-1987.

A minor concentration in East Asian studies consists of 18 credits from courses dealing with East Asia. Nine credits must be from History 223, 224; Political Science 346, 347, or World Literature 203, 204. Nine additional credits must be from the following: Anthropology 223, East Asian Studies 299, 314, 401; Japanese 101, 102, 201, 202, 203, 204, 300; History 223, 224, 333, 334; Philosophy and Religion 202; Political Science 346, 347; and World Literature 203, 204. Students minoring in East Asian studies are strongly encouraged to take Japanese language to satisfy the college language requirement.

019—299. *TOPICS IN EAST ASIAN STUDIES* STAFF
An interdisciplinary topics course focusing on aspects of East Asian culture, the specific topic to be chosen by the instructor. To be taught in English by guest faculty. *Three semester hours.*

019—314. *JAPANESE CULTURE AND SOCIETY* STAFF
Understanding contemporary Japanese society through the traditional arts, music, theater, education and social structures. Taught in English. Three hours per week. *Three semester hours.*

019—401 *SUMMER STUDY IN JAPAN* STAFF
A five-week course offered in collaboration with Tohoku Gakuin University in Sendai, Japan. This interdisciplinary course comprises three weeks of classroom instruction in Sendai on selected topics of Japanese culture and society, plus an introduction to conversational Japanese language; followed by a two-week tour of Japan. The instructors include English-speaking faculty of the host university as well as members of the Ursinus faculty. Offered annually mid-May through June. *Not open to in-coming freshmen. Three semester hours.*

020—ECONOMICS AND BUSINESS ADMINISTRATION

Professors PILGRIM, SYMONS; Associate Professors BORGMANN, LENTZ (*Chairman*), MEYER; Assistant Professors BOWERS, HARRIS; Instructor, ARMSTRONG

The work in the economics and business administration department is designed to give (1) knowledge of the structure and functioning of our economy; (2) knowledge of the philosophy and methods of economics as a policy science; (3) a suitable background in economics and business administration for those who wish to enter accounting, business, law, government, or graduate school.

REQUIREMENTS FOR MAJORS

All students majoring in the department must take a minimum of 30 semester hours of work to the department including Economics and Business Administration 101, 102, 242, 325, 326; and either 435, 436, 437, 438 or 464. In addition, they must take Mathematics 102 or 111, 241, and six semester hours in one of the other social sciences (political science, psychology, sociology, or anthropology). Mathematics 111 may be substituted for Mathematics 101, 102 upon the basis of adequate previous preparation. Selection of electives will depend on the student's vocational objective. Recommended electives for different objectives are as follows:

I. Economic Emphasis

This program is recommended for students planning to pursue graduate study in economics or who are interested in economics as a social science. Electives should be chosen from Economics and Business Administration 321, 328, 408, 434, 435, and 436. An introductory course in computer science is also recommended. Students planning on graduate study in economics should also take at least one year of calculus.

II. Business Administration Emphasis

This emphasis is recommended for students preparing for a career in business. It is also recommended for students planning to attend graduate school in management. Electives should be chosen from Economics and Business Administration 111, 112, 242, 306, 307, 313, 315, 316, 408, 436, and 437. It is also recommended that students take an introductory course in computer science. Students planning on graduate school in management should complete Economics and Business Administration 315 and at least one semester of calculus.

III. Accounting Emphasis

This program is designed for students interested in entering the field of accounting and seeking the C.P.A. designation. In addition to 30 semester hours of economics (including Accounting Principles) students should elect Intermediate Accounting and a minimum of 18 additional semester hours of accounting courses offered in the Ursinus Evening School. Although accounting courses beyond Accounting Principles do not count toward the economics and business administration major, they do receive credit toward graduation.

IV. Secondary School Teaching Certification

This program satisfies the Pennsylvania state requirements for secondary school certification in social science—economics emphasis. The required courses in economics and business administration are 101, 102, 325, 326, and 435. Electives should be selected from Economics and Business Administration 306, 307, 313, 316, 318, 328, 408, and 434.

Students majoring in the department are also encouraged to elect a minor concentration in other area. Students may elect a business-related minor concentration such as computer science, statistics, or quantitative methods. Alternatively, students may elect one or more of the special interest minors currently offered by other departments or may prepare their own minor. Students majoring in economics and business administration may not also elect minors in the department.

INTERDISCIPLINARY MAJORS

The economics and business administration department participates in interdisciplinary majors in applied mathematics - economics, American public policy, and international relations. For additional information and course requirements, see the listing in the section on combined majors.

MINOR CONCENTRATIONS

A minor concentration in accounting consists of Economics and Business Administration 111, 112, 201, 202, and any introductory course in computer science.

A minor concentration in business administration consists of Economics and Business Administration 101, 102, 111, 112, 306, 307, and 318.

A minor concentration in economics consists of Economics and Business Administration 101, 102, 325, 326 and 435.

A minor concentration in finance consists of Economics and Business Administration 101, 102, 111, 112, 306, 313, and 316.

A minor concentration in management science consists of Economics and Business Administration 315, 318, 436; Mathematics 241; and six credits of computer science.

020—101. *ECONOMICS PRINCIPLES—MACROECONOMICS* STAFF

Basic economic concepts, national income and its fluctuations, the money and banking system, international trade and the balance of payments, and the role of government. Three hours per week. *Three semester hours.*

020—102. *ECONOMIC PRINCIPLES—MICROECONOMICS* STAFF

Basic economic concepts, price theory, income distribution, and current economic problems. Three hours per week. *Three semester hours.*

020—111. *ACCOUNTING PRINCIPLES* MS. HARRIS, MR. BOWERS

An introduction to generally-accepted accounting principles and procedures underlying the periodic determination of income and financial position; emphasis is directed toward the proper recording of financial data leading toward the presentation of fairly-stated financial statement. Partnership accounting is also discussed. Three hours per week. *Three semester hours.*

020—112. *ACCOUNTING PRINCIPLES* MS. HARRIS, MR. BOWERS

An overview of accounting for corporations, analysis of various manufacturing cost systems, departmental and branch accounting, and accounting for decision-making. Analysis of financial statements and the impact of accounting methods and policies on financial reports from a managerial point of view. Prerequisite, Economics and Business Administration 111. Three hours per week. *Three semester hours.*

020—201. *INTERMEDIATE ACCOUNTING* MR. BOWERS

A study of advanced accounting principles and their applications to the construction and analysis of corporate financial statements, together with the basics of the financial mathematics involved. The course includes problems dealing with the presentation in financial statements of corporate financial position, changes in financial position and operating results. Special attention is given to the F.A.S.B.'s current developments. Prerequisite, EcBA 112. Three hours per week. *Three semester hours.*

020—202. *INTERMEDIATE ACCOUNTING* MR. BOWERS

A continuation of Economics and Business Administration 201. Prerequisite, Economics and Business Administration 201. Three hours per week. *Three semester hours.*

NOTE: EcBA 201, 202 will not be counted toward the 30 semester hours required for a major in Economics and Business Administration.

020—242. *STATISTICAL APPLICATIONS IN ECONOMICS AND BUSINESS* STAFF

An introduction to statistical methods commonly used in the testing of economic hypotheses, the identification of trends, and forecasting. Topics include the specification, estimation, and verification of multiple regression and time series models. Specific models will be estimated using standard computer software packages. A research paper will be required. Prerequisites, Economics and Business Administration 101, 102 and Mathematics 241. Three hours per week. *Three semester hours.*

020—306. *CORPORATION FINANCE* MS. HARRIS

Basic principles underlying the financing of the corporate structure. Short and long-term financing instruments. Expansion, failure, and reorganization of the corporation. Prerequisite, Economics and Business Administration 101. Knowledge of Economics and Business Administration 111 is also recommended. Three hours per week. *Three semester hours.*

020—307. *MARKETING* MR. BORGMANN

Basic principles and practices involved in the physical distribution of goods and services between producers and consumers. Methods used to create place, time, and possession utility. Prerequisites, Economics and Business Administration 102. Three hours per week. *Three semester hours.*

020—313. *PUBLIC FINANCE AND TAXATION* MR. SYMONS

Principles of public expenditures, public revenues, public indebtedness, and financial administration. Principles and workings of the federal income tax law. Class assignments in solving income tax problems. Prerequisite, Economics and Business Administration 101, 102. Three hours per week. *Three semester hours.*

URSINUS COLLEGE CATALOG

- 020—315. *QUANTITATIVE METHODS FOR BUSINESS* STAFF
An introductory course in operation research. Topics include linear programming, decision theory, P.E.R.T./C.P.M. analysis, and simulation methods. Emphasis on problem-solving and case studies. Prerequisite, Mathematics 241 or equivalent. Three hours per week. *Three semester hours.*
- 020—316. *MONEY AND BANKING* MR. SYMONS
Monetary theory and practice with reference to commercial banking in the United States. Governmental monetary and fiscal policies. International balance of payments. Prerequisites, Economics and Business Administration 101, 102. Three hours per week. *Three semester hours.*
- 020—318. *ECONOMICS OF MANAGEMENT AND LABOR* MR. BORGMANN, MR. MEYER
Theory and practice in the organization and management of the firm for effective use of capital and labor. Three hours per week. *Three semester hours.*
- 020—321. *HISTORY OF ECONOMIC THOUGHT* MR. MEYER
An examination of the development of systematic economic thought from ancient to modern times. Ideas considered in the light of their initial and continuing relevance. Three hours per week. *Three semester hours.*
- 020—325. *MICROECONOMIC THEORY* STAFF, DR. LENTZ
Advanced study of price theory and income distribution. Prerequisite, Economics and Business Administration 101, 102. Three hours per week. *Three semester hours.*
- 020—326. *MACROECONOMIC THEORY* STAFF, DR. LENTZ
Development of alternative theoretical models of output, employment, and price level determination and the impact of governmental stabilization policies. Prerequisites, Economics and Business Administration 101, 102. Three hours per week. *Three semester hours.*
- 020—328. *COMPARATIVE ECONOMIC SYSTEMS* MR. MEYER
Analysis of alternative national economic systems in developed and underdeveloped countries in theory and practice. The formulation of economic policy and problems is discussed and compared. Prerequisite, Economics and Business Administration 101, 102. Three hours per week. *Three semester hours.*
- 020—381. *INTERNSHIP* STAFF
An off-campus academic/work experience under the supervision of a faculty internship advisor and an on-site supervisor. Contact the chairman of the department for further details. Prerequisite, junior standing, nine credits in economics and business administration, and approval of a faculty internship advisor. Eight to 10 hours per week. *Three semester hours.*
- 020—408. *INTERNATIONAL ECONOMICS* STAFF
An introduction to the world economy with particular emphasis on the U.S. role in international goods and money markets. Specific topics include the cause of trade, tariffs and quotas, exchange rate systems, balance of payments and the effects of national economic policy on the international economy. Prerequisite, Economics and Business Administration 101, 102. Three hours per week. *Three semester hours.*
- 020—434. *ECONOMIC DEVELOPMENT* MR. MEYER
An examination of the theories of economic growth and development and of the process and problems of economic development in the contemporary world. Prerequisite, Economics and Business Administration 101, 102. Three hours per week. *Three semester hours.*

020—435. SEMINAR IN CURRENT ECONOMICS PROBLEMS MR. MEYER

Reading and discussion of articles from the professional literature on the utility of economic theory in the formulation of policy. Preparation and presentation of a research paper that demonstrates the use of economic methodology. Open to senior economics majors, or others with the permission of the instructor. Three hours per week. *Three semester hours.*

020—436. SEMINAR IN ECONOMETRICS STAFF

The design and testing of economic hypotheses using multiple regression analysis. Particular care will be given to the statistical and economic theory which lies behind the most common applications. A research paper will be required. Prerequisites, EcBA 242, 325 and 326, senior standing or permission of the instructor. Three hours per week. *Three semester hours.*

020—437. SEMINAR IN BUSINESS POLICY MR. BORGMANN

Examination of business policy problems and their solution. The case study method is used, combining written and oral presentations. Prerequisites, senior standing; EcBA 101, 102, 111, 112, 306, 307 and 318. Three hours per week. *Three semester hours.*

020—438. SEMINAR IN APPLIED ECONOMIC ANALYSIS DR. LENTZ

A research seminar which allows the student to utilize the economic theory and statistical techniques currently used by research and business economists to analyze markets for consumer products, producer goods and labor inputs. Special emphasis is placed on original analysis of primary documentary and statistical sources. A research paper will be required. Prerequisites, EcBA 325, Mathematics 241 and senior standing or permission of the instructor. Three hours per week. *Three semester hours.*

020—440. INTERDISCIPLINARY SEMINAR IN AMERICAN PUBLIC POLICY STAFF

Selected topics in American public policy. Preparation and discussion of research papers. Open to fourth-year students majoring in American public policy. (The same course as 440 under Political Science.) Three hours per week. *Three semester hours.*

020—464. SEMINAR IN APPLIED MATHEMATICS/
ECONOMICS STAFF

Topics in mathematics of particular importance in economics, with applications. Offered jointly by the department of mathematics and computer sciences and the department of economics and business administration. A research paper will be required. Prerequisite, Mathematics 112, and Economics and Business Administration 325, 326 or permission of instructor. Three hours per week. *Three semester hours.*

020—491. RESEARCH/INDEPENDENT WORK STAFF

Preparation of independent research paper. Open to candidates for departmental honors. *Three semester hours.*

020—492. RESEARCH/INDEPENDENT WORK STAFF

A continuation of course 491. Prerequisite, course 491. *Three semester hours.*

025—EDUCATION

Professors FAGO, FLETCHER; *Associate Professors* CHAMBLISS, O'BRIEN (*Chairman*); *Assistant Professors* DUNGAN, RIDEOUT.

Aims of the Department of Education

1. To contribute, in the classical tradition, to the liberal education of students by preparing them for free citizenship and continuing personal cultivation beyond any strictly vocational expectations. Great ideas expressed by great writers are our subject matter; our methods are discussion, analysis, synthesis, critical thinking, and problem-solving through clear and logical written and spoken English.
2. To provide a framework for acquiring the art of teaching; how people learn; under what conditions and at what stages they are most likely to learn; how to define educational objectives; how to design a curriculum/course/unit and to select instructional techniques to meet those objectives and to accommodate the broadest possible range of abilities and exceptionalities; and how to assess the extent to which the objectives are met.
3. To provide background on the history of education, on the philosophical theories on which educational practice has been based, and on the political realities which can make all the rest irrelevant.
4. To provide entry-level skills for beginning teachers in public and private educational settings.
5. To provide programs leading to teacher certification by the Pennsylvania Department of Education in the following areas.

Biology	German	Physics
Chemistry	Health & Physical	Physics-Math
English	Education	Social Studies
French	Latin	Spanish
General Science	Mathematics	Teaching Intern

Teacher certification through Ursinus College has been accepted in many other states, while Pennsylvania is party to interstate compacts and reciprocity agreements with most state educational agencies. This means that certification by the Commonwealth of Pennsylvania normally allows a person to teach nearly anywhere in the country as well as at American schools abroad. Certification in foreign languages or in health and physical education enables one to teach in every grade from kindergarten to 12th grade; the others listed above apply to grades 7 to 12.

Students are invited to elect courses in education to fulfill their degree requirements in basic intellectual skills, in the minor concentration, or in individual choice electives.

For students interested in a complete program in education, three options are available: 1) a teacher certification program; 2) a minor in secondary teaching (with or without certification); and 3) a minor in secondary education.

Teacher Certification.

Required courses: Education 202; Psychology 101 or 102; Education 223, 224, 405, 441, 443, and 444. Education 443 will be satisfied for students who major in health and physical education by completing H.P.E.R. 355 and 356. As a prerequisite to student teaching, second-year students are required to spend 10 hours observing grades 7 to 12. Third-year students observe classes for 20 hours. Those in foreign languages or in health and physical education must devote at least eight of these 20 hours of observation to grades K to 6. Details concerning these observations are normally distributed in Education 202.

As an institution having been granted program approval by the Pennsylvania Department of Education, the College is prepared to address the needs of non-traditional candidates for certification, includes those with degrees who wish initial or additional areas of certification. Where a candidate for certification can provide evidence of appropriate prior academic learning, teaching experience, for certification, provision is made for accrediting such work as part of the process of recommending a candidate for certification. Candidates for Ursinus degrees must meet the College and major department requirements noted elsewhere in this catalog.

A minor in secondary school teaching consists of Education 202, 223, 224, 405, 441, 443, and 444.

A minor in secondary education. Required courses: Psychology 101 or 102; Education 202, 223, 224, 444, and either 434 or 446.

025—202. *INTRODUCTION TO SECONDARY SCHOOL TEACHING*

DR. DUNGAN, DR. O'BRIEN

An introductory course for those who plan to teach. It deals with the organization and characteristics of the American school system, noting the characteristics of teaching as a profession and the teacher's responsibility in the classroom and the school. Three per week. *Three semester hours.*

025—223. *EDUCATIONAL PSYCHOLOGY—LEARNING*

DR. FAGO, DR. RIDEOUT

Contemporary learning theory for teachers. The course takes an information-processing approach to cognition, and includes such topics as concept formation, problem solving, memory, and attention. Educational applications will be stressed. (The same course as 223 under Psychology.) Prerequisite, 101 or 102. Three hours per week. *Three semester hours.*

025—224. *EDUCATIONAL PSYCHOLOGY—GROWTH AND DEVELOPMENT*

DR. CHAMBLISS

The nature and development of the psychological processes from the prenatal period through adolescence. (The same course as 224 under Psychology.) Prerequisite, Psychology 101 or 102. Three hours per week. *Three semester hours.*

025—381 *INTERNSHIP*

STAFF

An off-campus academic/work experience under the supervision of an internship adviser and an on-site supervisor. This course is limited to those students with teaching intern certification, and requires a full-time teaching position in an approved public or private school setting. *Three semester hours.*

025—405. *STUDENT TEACHING AND PRACTICUM*

DR. DUNGAN, DR. O'BRIEN

A laboratory course consisting of observation and student teaching. Supervision is provided by the faculty in the department of education and where possible, by other members of the College community in cooperation with teachers from local schools. Conferences and critiques occur between College faculty and student teachers. A practicum is held bi-weekly during this period which allows students to discuss their teaching experiences and to examine the relationship between theory and practice. The course is open only to fourth-year students who meet published academic and personality criteria. These criteria include a cumulative average of at least C+ (78.33) by the end of the junior year. Fall semester. Prerequisites: Education 202, 223, 224, 441, 443, 444. *Ten semester hours* for health and physical education majors. *Nine semester hours* for others.

025—409. *EDUCATIONAL AND PSYCHOLOGICAL TESTS AND MEASUREMENTS* STAFF

An introductory survey of the field of measurement in psychology and education; main features of the technique of testing and test construction; types of tests and scales; evaluation; interpretation; use. (The same course as 409 under Psychology.) Prerequisites, Psychology 101, 210. Two hours of lecture. Two hours of laboratory per week. *Three semester hours.*

025—434. *SEMINAR IN SECONDARY EDUCATION* DR. DUNGAN

A study of selected topics, drawn from curriculum, relevant to secondary education in today's schools, with special attention to curriculum development. Two hours per week. *Two semester hours.*

025—441. *ORIENTATION TO EDUCATIONAL PRACTICE AND METHODOLOGY* DR. DUNGAN, DR. O'BRIEN

Principles of secondary school teaching; general methods of instruction; problems of the beginning teacher; multicultural education; teaching reading in the content areas; function and use of instructional materials. Two hours per week. *Two semester hours.*

025—443. *SPECIAL METHODS OF TEACHING IN THE SECONDARY SCHOOLS* STAFF

This course, which supplements the general methods course (441) and which is offered concurrently, provides specialized instruction in teaching one of the subject areas offered in the College's teacher education programs. Sections are offered in each discipline and are noted on student records according to the following scheme.

- | | |
|------------------------|-----------------------|
| (C)—Classical Studies | (R)—Romance Languages |
| (E)—English | (S)—Science |
| (G)—Germanic Languages | (X)—Social Sciences |
| (M)—Mathematics | |

Sections are taught by experts in the subject fields from both the College and the public schools. Prerequisite, Education 441 (must be scheduled concurrently). One hour per week. *One semester hour.*

025—444. *FOUNDATIONS OF EDUCATION* DR. DUNGAN, DR. O'BRIEN

A study of the philosophical and historical foundations of education, with reference to current conditions and practices in the public schools. A requirement for those preparing to teach, the course attempts to synthesize the student's study and experience in teacher education. Three hours per week. *Three semester hours.*

025—446. *ISSUES AND TRENDS IN CONTEMPORARY EDUCATION* DR. O'BRIEN

A study of current issues with reference to educational history on the one hand, and to trends and educational futures on the other. At present the course addresses such topics as values education, the so-called quality vs. equity dilemma, accountability, and the reform of teacher education. Three hours per week. *Three semester hours.*

025—451 *RESEARCH*

This course comprises directed reading and research on a specific topic in education. Students wishing to register in this course present to the adviser for this research a proposal outlining the research to be conducted. The proposal must be approved by the adviser. At regular intervals during the semester, students submit progress outlines and meet with the adviser to discuss them. A final paper describing research findings, at least tentatively, is required. *One semester hour.*

025—452 *RESEARCH*

Same as 451, but offered in the spring semester.

025—491 RESEARCH/INDEPENDENT WORK

Independent investigation of an aspect of teaching, using both the library to examine relevant literature and the school setting as a laboratory for applying theory. Oral progress reports and a major paper are required. Written consent of the research adviser and department staff must be presented at the time of registration. *Three semester hours.*

025—492 RESEARCH/INDEPENDENT WORK

Same as 491, but offered in the Spring Semester.

025—493 SUPERVISED FIELD EXPERIENCE

For current teachers and others with relevant experience who wish initial or additional certification. Faculty will supervise teaching assignments of less than a full semester during which the candidate teaches a variety of units or a range of grade levels under the guidance of a classroom teacher. *One semester hour.*

025—494 SUPERVISED FIELD EXPERIENCE

Same as 493, but offered in the Spring Semester.

ENGLISH

Professors DECATUR, DOLMAN, JONES; Associate Professors HENRY, PERRETEN (Chairman), WICKERSHAM; Assistant Professors COBBS, LIONARONS, RICHTER, SCHROEDER; Lecturers DOUGHTY, RANDOLPH.

Majors must take at least 30 semester hours in English beyond Composition 101, 102. To complete their departmental requirements, in their junior or senior year majors must pass a comprehensive examination in English and American Literature. Students majoring in English will be urged strongly to take the following courses: Literature 203, 204; Literature 219, 220; and Literature 327. English majors also are advised to take History 101, 102 and History 309, 310 or 311, 312 as electives. Students preparing for graduate study in English should elect French, German or classical languages. Literature 214 is required of students who want to be certified to teach English.

Students will be guided in selecting courses that will help prepare them for the comprehensive examination as well as for their careers.

A minor concentration in English consists of 18 credits in English, excluding Composition 101, 102. Either Literature 203 and 204, or 219 and 220 is strongly recommended.

031—COMPOSITION

031—101. FIRST-YEAR COMPOSITION

STAFF

Practice in the writing of exposition; readings in narrative and expository prose. Three hours per week. *Three semester hours.*

031—102. FIRST-YEAR COMPOSITION

STAFF

Continuation of Composition 101; expository writing based on readings in poetry, short fiction, drama or writing in the disciplines. Emphasis on the process of developing and writing a research paper. Three hours per week. *Three semester hours.*

031—205. ADVANCED COMPOSITION

MR. DOLMAN

A workshop course in the writing of the short story. The student will write two short stories and a critical analysis of a modern short story writer. Enrollment limited to 12 students. Prerequisite, Composition 101, 102 or equivalent. Three hours per week. *Three semester hours.*

Composition 205 is offered only in the fall semester.

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031—207. *INTRODUCTION TO JOURNALISM* DR. COBBS

An introduction to journalistic writing and interpretive reporting. Work on college publications is recommended to provide practical experience. Prerequisite, Composition 101, 102 or its equivalent. Three hours per week. *Three semester hours.* Enrollment is limited to 15 students.

031—234. *ADVANCED EXPOSITORY WRITING* MR. JONES

Practice, on an advanced level, in the writing and critical evaluation of non-fictional prose with special emphasis on types of exposition. Prerequisite, Composition 101, 102, or equivalent. Three hours per week. *Three semester hours.* Enrollment is limited to 15 students per section.

031—308. *ADVANCED COMPOSITION* MR. DOLMAN

A conference course in creative writing offering the student the opportunity to practice various forms of prose: short stories, extended essays, plays, and the like. Enrollment limited to ten qualified students by arrangement with the instructor. Prerequisite, Composition 101, 102 or equivalent. Individually scheduled. *Three semester hours.*

Composition 308 is offered only in the spring semester.

032—LITERATURE

032—201. *LITERARY CRITICISM AND ITS APPLICATION* DR. LIONARONS

An introduction to literary criticism through the study of traditional and specialized approaches to fiction, drama, and poetry. Three hours per week. *Three semester hours.*

032—203. *SURVEY OF ENGLISH LITERATURE*

MR. JONES, DR. PERRETEN

The history of English literature from its beginning to the end of the neoclassical era. Special attention is given to the social background. Prerequisite, Composition 101, 102 or equivalent. Three hours per week. *Three semester hours.*

032—204. *SURVEY OF ENGLISH LITERATURE*

MR. JONES, DR. PERRETEN

A continuation of course 203 to the present. Three hours per week. *Three semester hours.*

032—209. *SHAKESPEARE* DR. DeCATUR

The reading of Shakespeare's principal plays and the study of their background. Three hours per week. *Three semester hours.*

032—210. *SHAKESPEARE* DR. DeCATUR

Continuation of Literature 209. Literature 209 is not a prerequisite for Literature 210. Three hours per week. *Three semester hours.*

Literature 209 and 210 are elective for second-year, third-year and fourth-year students and for freshmen with advanced placement and credit in English Composition.

032—213. *HISTORY OF THE ENGLISH LANGUAGE* DR. LIONARONS

A survey of the development of the English language from Old English to modern American and British English. Close analysis of samples of English in at least three stages of its history. Three hours per week. *Three semester hours.*

032—214. *LINGUISTICS AND MODERN GRAMMAR* DR. LIONARONS

An introduction to linguistics, stressing the ways language structure promotes effective communication. Recommended for future writers and lawyers as well as English teachers. Three hours per week. *Three semester hours.*

COURSES OF INSTRUCTION

- 032—219. *AMERICAN LITERATURE* DR. COBBS, DR. SCHROEDER
 A survey of American literature from its beginning to the Civil War. Three hours per week. *Three semester hours.*
- 032—220. *AMERICAN LITERATURE* DR. COBBS, DR. SCHROEDER
 American literature from the Civil War to the present. Three hours per week. *Three semester hours.*
- 032—305. *ENGLISH LITERATURE FROM 1660 TO 1740* DR. PERRETEN
 The literature of the Restoration and the early decades of the eighteenth century. Three hours per week. *Three semester hours.*
Literature 305 is elective for third-year and fourth-year students.
- 032—306. *ENGLISH LITERATURE FROM 1740 TO 1795* DR. PERRETEN
 The literature of the neo-classical age and of pre-romanticism. Three hours per week. *Three semester hours.*
Literature 306 is elective for third-year and fourth-year students.
- *032—307. *ENGLISH POETRY, 1790-1824* DR. PERRETEN
 A study of the English romantic poets from 1790 to the death of Byron. Three hours per week. *Three semester hours.*
Literature 307 is elective for third-year and fourth-year students.
- *032—308. *ENGLISH POETRY, 1824-1901* MR. JONES
 A study of the poetry of Tennyson and his contemporaries. Three hours per week. *Three semester hours.*
Literature 308 is elective for third-year and fourth-year students.
- 032—315. *20th CENTURY POETRY* DR. COBBS
 A study of modern poetry written in Britain and America. Three hours per week. *Three semester hours.*
- 032—320 through 326. *CLASSICS IN TRANSLATION* DR. WICKERSHAM
 Each course in this series gives a thorough study of one area of ancient Greek or Roman experience, thought and literature.
- 032—320. *COMEDY.* Three hours per week. *Three semester hours.*
- *032—322. *EPIC.* Three hours per week. *Three semester hours.*
- *032—324. *TRAGEDY.* The plays of Aeschylus, Sophocles and Euripides read in sequence, with emphasis on the development of tragic form and the tragic view of human life. Three hours per week. *Three semester hours.*
- *032—326. *MYTHOLOGY.* Three hours per week. *Three semester hours.*
- *032—329. *CHAUCER* DR. LIONARONS
 A study of Chaucer's poetry in its historical context, including *Troilus and Criseyde*, *The Canterbury Tales*, and some of the short poems. Three hours per week. *Three semester hours.*
- *032—330. *ENGLISH NON-DRAMATIC LITERATURE, 1485-1660* DR. DECATUR
 A study of the non-dramatic poetry and prose of the English Renaissance, with concentration upon the works of Metaphysicals and Cavaliers, and a variety of prose forms. Three hours per week. *Three semester hours.*
Literature 330 alternates with Literature 331.

*This course is not offered in 1986-1987.

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032—331. *ENGLISH DRAMA, BEGINNINGS TO 1642* DR. DeCATUR
A study of the development of English drama (excluding Shakespeare) through the Medieval and Renaissance periods up to the closing of the theaters. Prerequisites, Literature 203 and Literature 209 or 210. Three hours per week. *Three semester hours.*

Literature 331 alternates with Literature 330.

032—332. *SPENSER AND MILTON: THE ENGLISH EPIC* DR. DECATUR
A study of the major works of Spenser and Milton with focus on the epic as an English genre. Prerequisite, Literature 203 or History 303, 304. Three hours per week. *Three semester hours.*

032—334. *THE NOVEL IN ENGLAND SINCE THE BEGINNING OF THE 20th CENTURY* DR. COBBIS
A study of British fiction of the 20th century. Three hours per week. *Three semester hours.*

Literature 334 alternates with Literature 434.

*032—335. *MODERN DRAMA* DR. HENRY
A reading and discussion course in significant European and American dramatists, from Ibsen to O'Neill, with emphasis on influences of earlier playwrights on modern writers. Prerequisite, English Composition 101. Three hours per week. *Three semester hours.*

*032—336. *CONTEMPORARY DRAMA* DR. HENRY
A reading and discussion course in significant contemporary European and American dramatists, since World War II. Prerequisite, English Composition 101. Three hours per week. *Three semester hours.*

Literature 335 and 336 alternate with Communication Arts 301, 302.

*032—337. *THE NOVEL IN ENGLAND AND AMERICA—THE BEGINNINGS TO 1820* MR. JONES
A study of the origins and development of the novel in England and America before Dickens and Cooper. Prerequisite, English Composition 101. Three hours per week. *Three semester hours.*

Literature 337 alternates with Literature 339.

032—339. *THE NOVEL IN ENGLAND AND AMERICA DURING THE VICTORIAN ERA* MR. JONES
A study of the development of the novel in England and America from 1820 to 1900. Prerequisite, English Composition 101. Three hours per week. *Three semester hours.*

Literature 339 alternates with Literature 337.

032—381. *INTERNSHIP* STAFF
An off-campus academic academic/work experience under the supervision of an internship adviser and an on-site supervisor. Discuss details with the chairman of the department. Prerequisite, junior standing and the approval of a faculty internship adviser. *Three semester hours.*

032—434. *THE NOVEL IN AMERICA SINCE THE BEGINNING OF THE 20th CENTURY* DR. SCHROEDER
A study of American fiction of the 20th century. Three hours per week. *Three semester hours.*

Literature 434 alternates with Literature 334.

**This course is not offered in 1986-1987.*

COURSES OF INSTRUCTION

- 032—441. SEMINAR IN ADVANCED STUDIES IN LITERATURE STAFF
 A study of genre. Prerequisite, junior or senior standing. Three hours per week. *Three semester hours.*
- 032—442. SEMINAR IN ADVANCED STUDIES IN LITERATURE STAFF
 A study of a major author. Prerequisite, junior or senior standing. Three hours per week. *Three semester hours.*
- 032—491. RESEARCH/INDEPENDENT WORK STAFF
 This course is open to candidates for departmental honors and to other students with the permission of the department chairman. *Three semester hours.*
- 032—492. RESEARCH/INDEPENDENT WORK STAFF
 A continuation of course 491. Prerequisite, course 491. *Three semester hours.*

080—FINE ARTS

Professor VISSER; Associate Professor HENRY; Assistant Professors FRENCH, XARAS (Chairman); MR. WATSON

Art, music and theater hold a prominent place in the cultural heritage of Western civilization. Students in a college of liberal education should gain an acquaintance with and an understanding of the creative arts in the broad cultural and intellectual context of Western civilization. Courses in the fine arts are intended to give students an increased knowledge of the arts by introducing them to principles, history and practice of the visual and performing arts.

In addition to courses for academic credit, there are various performance organizations which provide students the opportunity to participate in complementary activities.

A minor concentration in art consists of Fine Arts 101; Art 221, 222, 311, 312, and three additional credits in art.

A minor concentration in music history and theory consists of History 101, 102; Fine Arts 101; Music 211, 212, 321, 322.

080—101. INTRODUCTION TO THE FINE ARTS

MR. FRENCH, DR. HENRY, MR. XARAS

An introduction to the principal elements of the arts, including composition, texture, form, and style, and a foundation for future study in art, music and theater. The course is designed to enhance the students' understanding and knowledge of the arts. Three hours per week. *Three semester hours.*

079—Art

079—221. INTRODUCTION TO STUDIO ART I MR. XARAS

An introduction to the two-dimensional media, including principles of line, shape, color and composition, and experience in wet and dry color and value. Three hours per week. *Three semester hours.* Enrollment limited to 18 per section.

079—222. INTRODUCTION TO STUDIO ART II MR. XARAS

An introduction to the two-dimensional media. The course offers an opportunity to develop creative ability using two-dimensional media. Prerequisite, Art 221. Three hours per week. *Three semester hours.* Enrollment limited to 18 per section.

079—311. HISTORY OF ART I DR. VISSER

An introduction to the history of architecture, sculpture, and painting through the Renaissance, presented by means of illustrated lectures and museum trips. Prerequisite, permission of the instructor. Three hours per week. *Three semester hours.*

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- 079—312. *HISTORY OF ART II* DR. VISSER
An introduction to the history of architecture, sculpture and painting from the Renaissance to the present, presented by means of illustrated lectures and museum trips. Prerequisite, Fine Arts 311 or permission of the instructor. Three hours per week. *Three semester hours.*
- 079—321. *PAINTING* MR. XARAS
Sustained studio work developing procedural and conceptual expression in various painting media. Prerequisites, Art 221, 222. Three hours per week. *Three semester hours.* Enrollment limited to 18.
- 079—322. *DRAWING* MR. XARAS
Sustained studio work developing procedural and conceptual expression using pen and ink and charcoal. Prerequisites, Art 221, 222. Three hours per week. *Three semester hours.* Enrollment limited to 18.
- 079—401. *SPECIAL PROJECTS IN ART* STAFF
Advanced independent work on a creative project supervised and approved by a faculty adviser. *Three semester hours.*

055—Music

- 055—211. *MUSIC HISTORY I: MIDDLE AGES TO BAROQUE* MR. FRENCH
A survey of early Western musical history with emphasis on the relation of musical developments to the broader cultural and artistic context. Prerequisite, Fine Arts 101 or permission of the instructor. Three hours per week. *Three semester hours.*
- 055—212. *MUSIC HISTORY II: PRE-CLASSICS TO 20TH CENTURY* MR. FRENCH
A continuation of Music 211. In this more familiar part of music history, investigation of selected topics will play a larger part in the course structure than in Music 211. Prerequisite, Music 211 or equivalent, or by permission. Three hours per week. *Three semester hours.*
- 055—221. *MUSIC THEORY I* STAFF
A practical course in the theory and techniques of composition. The objective is the acquisition, at an elementary level, of fluency with musical notation through written exercises. Three hours per week. *Three semester hours.*
- 055—222. *MUSIC THEORY II* STAFF
A continuation of Music 321 with emphasis on student projects in composition. Prerequisite, Music 221 or equivalent, or by permission. Three hours per week. *Three semester hours.*
- 055—311. *CHORAL LITERATURE* MR. FRENCH
An historical survey of choral music from the Middle Ages to the 20th Century. The course will examine the development of major forms (mass, motet, oratorio) as well as short forms (part-song, madrigal). Prerequisite, Music 212 or equivalent, or by permission. Three hours per week. *Three semester hours.*
- 055—312. *SYMPHONIC LITERATURE* STAFF
An historical survey of symphonic music from the 18th Century to the 20th Century. The course will trace the development of the symphony, concerto, symphonic poem and modern trends in orchestral music. Prerequisite, Music 212 or equivalent, or by permission. Three hours per week. *Three semester hours.*

055—317 and 318. *TOPICS IN THE HISTORY AND THEORY OF MUSIC*

MR. FRENCH

A study of a specific period or genre of music such as 19th century Romanticism, American opera, and others. Consideration will be given to related developments in other branches of cultural life such as the literary and visual arts, politics, and religion. The course will include presentations by experts in these disciplines. Prerequisite, Music 211 and 212 or permission of the instructor. Three hours per week. *Three semester hours.*

055—323 *COUNTERPOINT*

STAFF

A study of contrapuntal techniques of the Renaissance and Baroque periods. The course includes compositional exercises and analysis of works of representative composers such as Palestrina and Bach. Prerequisite, Music 222 or equivalent, or by permission. Three hours per week. *Three semester hours.*

055—324 *20th-CENTURY THEORY*

STAFF

A study of 20th century compositional techniques. The course includes compositional exercises and analysis of works of representative composers such as Schoenberg, Stravinsky and Bartok. Prerequisite, Music 222 or equivalent, or by permission. Three hours per week. *Three semester hours.*

055—401. *SPECIAL PROJECTS IN MUSIC*

STAFF

Advanced independent work on a creative, historical or theoretical project supervised and approved by a faculty adviser. *Three semester hours.*

ENSEMBLES*URSINUS COLLEGE CHOIR*

MR. FRENCH

A large choral ensemble open to everyone in the College community. The College Choir performs three or four major works each year including a performance of Handel's Messiah in the fall semester. Two hours per week.

MEISTERSINGERS

MR. FRENCH

A small choral ensemble (approximately 35 voices) open by audition to students in the College Choir. Most of the ensemble's performances, including a tour, take place in the spring semester. Two to three hours per week.

CHAMBER SINGERS

MR. FRENCH

A small, select group of eight to 12 Meistersingers which performs music of the 15th and 16th centuries. This group performs with the Meistersingers during the spring tour. Two hours per week.

URSINUS COLLEGE BAND

MR. WATSON

The College Band is open to everyone in the College community. The College Band presents two concerts each year. Two hours per week.

URSINUS COLLEGE JAZZ BAND

MR. WATSON

The Jazz Band is open to everyone in the College community. The Jazz Band performs at least once a semester and offers a clinic/master class with a guest soloist during the year. Two hours per week.

077—Theater

See *Communication Arts.*

PROTHEATRE

DR. HENRY

Membership in proTheatre, the drama organization, is available to students from all disciplines. Two or more productions, ranging from the classics to the avant-garde, are offered during the year.

034—GEOGRAPHY

Professor DAVIS (Chairman)

034—102. *GEOGRAPHY* MR. DAVIS

Extensive study of the major regions of the world. The purpose is to analyze each from the standpoint of climate, natural resources, and economic problems, and to give the student a fairly detailed knowledge of the physical geography of the regions. Three hours per week. *Three semester hours.*

033—GEOLOGY

Visiting Professor BOEKENKAMP

The science of geology presents to the student the physical content and history of the earth and their relationship to the economic and cultural worlds of man.

033—101. *PHYSICAL GEOLOGY* DR. BOEKENKAMP

The analysis of earth materials, structures, and processes that form the earth's surface. Two hours of lecture and two hours of laboratory work per week. *Three semester hours.*

033—102. *HISTORICAL GEOLOGY* DR. BOEKENKAMP

A systematic study of the earth's historic events as recorded by geologic processes and organic evolution. Two hours of lecture and two hours of laboratory work per week. *Three semester hours.*

GERMAN

See Modern Languages.

GREEK

See Classical Languages.

040—HEALTH, PHYSICAL EDUCATION AND RECREATION

Associate Professors BOYD, CREEL, DAVIDSON, (Chairman) WHATLEY; Assistant Professor CHLAD, MORRISON; Visiting Professor BROWN; Instructors POLEY, WAILGUM.

The health, physical education and recreation (HPER) department serves dual functions: (1) to provide for all students a diversified service program of activities, and (2) to offer to those students interested in majoring in the field, a comprehensive program in health, physical education and recreation leading to teaching and other professional certifications.

Included in the service program are the required two-hour freshman classes in basic activities, the optional organized intramural programs for men and women, and the provision of recreational facilities for use of all students in their leisure time.

The professional program is a four-year course, offering, within the framework of a broad liberal arts education, the opportunity to receive specific training in the field of health, physical education and recreation. Implicit in its objectives are the development of the total individual in knowledge, skills, habits and attitudes, the development of social and professional competencies, the growth of insight, independent thought, initiative and leadership, and the evolution of a dynamic ethical philosophy.

Core Requirements for Majors

Students majoring in health, physical education and recreation must take the following courses: HPER 131, 351, 352, 362, 368, 462; Biology 101 or 111, 317 and 318. These students are also required to complete at least one of the following areas of concentration:

Areas of Concentration

I. Teaching of health and physical education

This program is recommended for those preparing to become teachers. The required courses are HPER 132, 232, 355, 365, 464, 10 semester hours of majors' activities representing all five activities areas, one of the following: HPER 241, 243, or 346; Education 202, 223, 224, 405, 441, 444; Psychology 101 or 102. Recommended electives, HPER 333, 334, IDS 350.

II. Human Performance

A science-based program recommended for those interested in athletic training, pre-physical therapy, and other areas related to human performance. The required courses are HPER 334, 468, five semester hours of majors' activities including HPER 307 and representing three of the five activities areas; Math 241; eight hours of laboratory courses in the natural sciences in addition to Biology 317, 318; three semester hours of anthropology or sociology; and Psychology 101 or 102, 223 and 224.

NOTE: Students seeking admission to graduate programs in physical therapy or related fields should take Biology 111, 112; Chemistry 111, 112; Math 111, 112; and Physics 111, 112.

III. Recreation and Leisure Services

This program is recommended for those preparing for careers in the field of leisure services. The required courses are HPER 243, 342, 346, 347, 348, 381, 412, 448 and five hours of majors' activities representing three of the five activities areas.

Minor Concentrations

A minor concentration in athletic training consists of HPER 351, 352, 334, 368, 468. Three semester hours of majors' activities including HPER 307; and Biology 317, 318. Recommended courses are Psychology 101, 102; Chemistry 101, 102, or 111, 112.

A minor concentration in coaching consists of HPER 351, 365, 368, 468, three credits of majors' activities courses including 307; Psychology 224; and Biology 317, 318. Recommended courses are HPER 344, 346, 363, 364.

A minor concentration in recreation consists of HPER 131, 243, 347, three credits of majors' activities courses, and three of the following: HPER 241, 242, 342, 346, 348, 448.

A minor concentration in health consists of five of the following: HPER 132, 232, 333, 334, 368, IS 350 and two selected from: HPER 355, 362, 460, 464.

Required Activities Courses

040—110. INTRODUCTION TO PHYSICAL EDUCATION STAFF

This course is designed to acquaint the students with the concepts of total fitness, provide the opportunity for self testing, self evaluation, and the development of corrective programs. This course is required of all students except those majoring in physical education and should be completed in the first year. This course will be offered in the fall semester. Lecture-Laboratory. *One-half semester hour.*

In addition to 040—110, all students except those majoring in physical education will be required to elect a total of 1½ semester hours of activities from the following: HPER 010, 014, 017, 019, 022, 027, 031, 032, 033, 034, 037, 039.

Academic credit for activities courses, in excess of the college requirement, will be withheld until the student has earned a total of 122 semester hours credit. An exception will be made in the case of students who wish to minor in HPER. In such cases, academic credit will be given within the 122-hour limit.

The intent of these courses will be to develop basic skills, improve fitness, provide enjoyment and develop recreational and social competence through participation in life-time sports.

Professional Courses

Students in other majors may elect HPER 131, 132, 232, 241, 242, 243, 333, 334, 351, 352, 362, 368, and 464. Academic credit will be withheld, for all other HPER courses, until the student has completed the general college requirements, departmental requirements, and has earned a total of 122 semester hours credit. An exception will be made in the case of a student who wishes to minor in HPER or have health and physical education upon his teaching certification in addition to another subject matter certification. In such a case, academic credit will be given within the 122-hour limit. Students should consult the Education Department to learn the exact certification requirements of a particular state.

040—131. *SURVEY OF HEALTH, PHYSICAL EDUCATION AND RECREATION* DR. DAVIDSON

A survey course designed to give the student an understanding of the history, basic philosophies, principles, problems, and scope of the disciplines of health, physical education, and recreation. Three hours per week. *Three semester hours.*

040—132. *HEALTH AWARENESS AND WELLNESS* MISS BOYD

A study of factors affecting the physical, mental, and social well-being of the individual and of the community. Major emphasis is placed on the identification and prevention of personal health problems and on the functioning of the human body. Three hours per week. *Three semester hours.*

040—232. *CURRENT TRENDS IN HEALTH* MISS BOYD

An examination of past, present, and future health-care situations faced by today's consumer. This course will include information on products, services, and treatments in the health-care environment. Three hours per week. *Three semester hours.*

*040—241. *OUTDOOR EDUCATION* MR. WHATLEY

This course is designed to provide the student with an insight into the history, philosophy and trends in outdoor education. Emphasis is placed on administrative processes and program development as they relate to the public and private sectors of the community. Three hours per week. *Three semester hours.*

040—242. *LEADERSHIP IN CAMP AND CLUB ACTIVITIES* MR. WHATLEY

Discussion of the principles, characteristics, and processes of leadership in light of their significance to directors of camp and club activities. Three hours per week. *Three semester hours.*

040—243. *RECREATION AND LEISURE IN A MODERN SOCIETY* DR. CREEL

A study of the scope and significance of recreation field services, their history, and development. Theories and values of recreation, play, and leisure will be explored. Three hours per week. *Three semester hours.*

*040—333. *ALCOHOL AND DRUGS—USE AND ABUSE* STAFF

The significance of drug and alcohol use and abuse in society is analyzed. The etiology of health problems related to these substances is emphasized, including the prevention, intervention, treatment, and rehabilitation of drugs and alcohol abuse. Three hours per week. *Three semester hours.*

*This course is not offered in 1986-1987.

COURSES OF INSTRUCTION

040—334. *NUTRITION AND WEIGHT CONTROL* MISS CHLAD

The relationship between nutrition, exercise, and weight control will be examined from various perspectives: scientific principles, consumer protection, and holistic health concepts. The course will explore the principles of nutrition and the process of metabolism. Three hours per week. *Three semester hours.*

040—342. *FACILITIES IN RECREATION AND PARKS* DR. CREEL

Considers trends, problems, and future directions of facility development, construction, and maintenance of recreation and park facilities. Prerequisite, HPER 239. Three hours per week. *Three semester hours.* (Alternate with 340).

040—346. *FITNESS/EXERCISE PROGRAM MANAGMENT* DR. CREEL

A general survey of the exercise and fitness movement. Methods and techniques of teaching, terminology, and history will be examined. Particular attention is given to various individual and team program development. Three hours per week. *Three semester hours.*

040—347. *RECREATION FOR AN ADULT POPULATION* DR. CREEL

An analysis of the techniques used to confront the problems and needs of an adult population through leisure services. The course includes assessment techniques, program design, and exercise prescription. Three hours lecture, three hours laboratory. *Four semester hours.*

040—348. *TRENDS IN COMMUNITY RECREATION* DR. CREEL

The course attempts to identify the various recreational opportunities available in municipal, military, religious, public and private institutions, and related support groups. A major emphasis is placed on leisure counseling. Three hours per week. *Three semester hours.* (Alternates with 448—offered spring 1985-86.)

040—351. *STRUCTURAL KINESIOLOGY AND BIO-MECHANICS* MS. WAILGUM

A study of the anatomy of the musculo-skeletal system essential for understanding human movement, with emphasis on the relationship of anatomic structure to function. Prerequisite, Biology 317, 318. Two hours lecture, two hours laboratory. *Three semester hours.*

040—352. *EXERCISE PHYSIOLOGY/HUMAN PERFORMANCE* MS. WAILGUM

The study of the physiological alterations and adjustments which occur in response to physical performance. Two hours lecture, two hours laboratory per week. *Three semester hours.*

040—355. *METHODS OF TEACHING HEALTH AND PHYSICAL EDUCATION* MS. MORRISON

Principles, methods, and problems of teaching health and physical education at the elementary and secondary levels. The course includes extensive training in the spectrum of teaching styles, macro- and micro-teaching, unit and lesson planning, basic curriculum design and process-product analysis of learning episodes. Open only to physical education majors or students who have completed six hours in Education. Three hours per week. *Three semester hours.*

040—362. *TESTS AND MEASUREMENT IN HEALTH, PHYSICAL EDUCATION AND RECREATION* MS. MORRISON

Concentration on test preparation in the cognitive, psychomotor and affective domains, application of measurement and evaluation options, utilization of statistical procedures specifically designed for the behavioral sciences, analysis of data through the use of computers, and participation in field experiences with standardized testing. Three hours per week. *Three semester hours.*

URSINUS COLLEGE CATALOG

- 040—363. *OFFICIATING* STAFF
The course in officiating is designed with particular reference to the needs of prospective coaches and officials. Emphasis will be placed on football (men), field hockey (women), basketball and volleyball (men and women). *Three semester hours.*
- 040—364. *OFFICIATING* STAFF
Continuation of 363. Emphasis will be placed on track & field (men), cross country (men), baseball (men), lacrosse (women), softball (women), swimming (men and women). *Three semester hours.*
- 040—365. *PHILOSOPHY AND PRINCIPLES OF COACHING* STAFF
This course is designed with reference to the needs of prospective coaches and will center on the principles and philosophies of coaches as well as the developing role of psychology in athletics. Three hours per week. *Three semester hours.*
- 040—368. *FIRST AID CARE AND PERSONAL SAFETY* MISS CHLAD
This course deals with the causes, preventive procedures and emergency treatment for all types of common injuries, along with basic athletic training techniques. Course work meets the requirements for the Red Cross Advanced First Aid and C.P.R. Certification. Three hours per week. *Three semester hours.*
- *040—381. *INTERNSHIP IN RECREATION AND LEISURE SERVICES* STAFF
An internship experience in a hospital, business, and/or geriatric care center with an emphasis on the concept of "wellness." An 80.0 grade point average in HPER and the permission of the department are required. *Three semester hours.* (Expected to be offered 1986-87.)
- *040—412. *APPLIED LEADERSHIP PRACTICUM* STAFF
An off-campus academic/work experience in a community or corporate recreational program. An 80.0 grade point average in HPER and the permission of the department are required. *Three semester hours.* (Expected to be offered 1986-87.)
- *040—448. *THERAPEUTIC RECREATION* DR. CREEL
The leisure needs of special populations are addressed. Targeted populations incorporated into this study include physical and/or mental disability, age, socially deviant behavior and institutionalized individuals. The course will focus on the implementation and the delivery of recreational services needed by these special populations. Three hours per week. *Three semester hours.* (Alternates with 348—offered in the spring of 1986-87.)
- 040—460. *CURRICULUM DESIGN IN HEALTH & PHYSICAL EDUCATION* MS. MORRISON
A study of curriculum theory, process of subject matter selection, alternative curricular patterns, scope and sequence with regard to grades K through 12, building curriculum on sound educational objectives. Three hours per week. *Three semester hours.*
- 040—462. *ADMINISTRATION OF HEALTH, PHYSICAL EDUCATION, AND RECREATION* DR. DAVIDSON
A study of the administrative theory, principles, and problems in health, physical education and recreation. Three hours per week. *Three semester hours.*

*This course is not offered in 1986-1987.

COURSES OF INSTRUCTION

040—464. *CORRECTIVE AND ADAPTIVE PHYSICAL EDUCATION* MS. WAILGUM

An analysis of conditions affecting the development of atypical children; methods for selecting and classifying such individuals, with particular attention to the adaption of activities to meet their needs. Prerequisite, Biology 317, 318 or permission of instructor. Three hours per week. *Three semester hours.*

040—466. *HEALTH AND PHYSICAL EDUCATION SEMINAR* MISS BOYD

Consideration of current trends and emphases in the fields of health, physical education and recreation. Lecture, discussion, papers, reports, and guest speakers. Limited to second semester seniors in physical education curriculum. Two hours per week. *Two semester hours.*

040—468. *CARE AND PREVENTION OF ATHLETIC INJURIES* MISS CHLAD

Conditioning exercises, diet, and various therapeutic aids are studied. Laboratory practice includes bandaging, taping, massage, and the clinical use of physical therapy equipment. Lecture, Lab. Four hours per week. *Three semester hours.*

040—482. *HUMAN PERFORMANCE INTERNSHIP* MS. WAILGUM

An off-campus academic/work related experience within the field of human performance which could take place in a hospital, corporation, clinic, or university setting. An 80 cumulative average within the human performance concentration, Biology 317, 318, and the permission of the department are required. *Three semester hours.*

040—491. *RESEARCH/INDEPENDENT WORK* STAFF

This course is open to candidates for departmental honors and to other students with the permission of the department chairman. *Three semester hours.*

040—492. *RESEARCH/INDEPENDENT WORK* STAFF

A continuation of course 491. Prerequisite, course 491. *Three semester hours.*

Activities Courses—Non-majors

040—010. *SOCIAL, FOLK AND SQUARE DANCING* MRS. POLEY
One-half semester hour.

040—014. *VOLLEYBALL* STAFF
One-half semester hour.

040—017. *BADMINTON, SQUASH, RACQUETBALL* MRS. POLEY
One-half semester hour.

040—019. *JUDO—SELF DEFENSE* MRS. POLEY
One-half semester hour.

040—022. *MODERN DANCE* MRS. POLEY
One-half semester hour.

040—027. *BASIC SWIMMING* DR. DAVIDSON
One-half semester hour.

040—029. *INTERMEDIATE SWIMMING* DR. DAVIDSON
One-half semester hour.

040—031. *GOLF* MRS. POLEY
One-half semester hour.

040—032. *LIFESAVING* DR. DAVIDSON
One-half semester hour.

URSINUS COLLEGE CATALOG

040—033. ARCHERY AND BOWLING <i>One-half semester hour.</i>	MRS. POLEY
040—034. WATER SAFETY INSTRUCTOR <i>Prerequisite, HPER 032. One semester hour.</i>	DR. DAVIDSON
040—037. WEIGHT TRAINING AND CONDITIONING <i>One-half semester hour.</i>	MRS. POLEY
040—039. TENNIS <i>One-half semester hour.</i>	MRS. POLEY
Activities Courses—Majors	
*040—100. SOCIAL, FOLK AND SQUARE DANCING <i>One semester hour.</i>	MRS. POLEY
040—101. FUNDAMENTAL GYMNASTICS <i>One-half semester hour.</i>	MS. MORRISON
040—103. SOCCER <i>One-half semester hour.</i>	DR. MANNING
*040—104. VOLLEYBALL <i>One-half semester hour.</i>	MS. WAILGUM
*040—105. WRESTLING <i>One-half semester hour.</i>	MR. RACICH
*040—106. LACROSSE <i>One-half semester hour.</i>	MISS BOYD
040—107. BADMINTON, SQUASH, RACQUETBALL <i>One-half semester hour.</i>	MISS BOYD
040—108. MISCELLANEOUS ACTIVITIES—RACQUETBALL, WATER POLO, BOX LACROSSE <i>One-half semester hour.</i>	DR. CREEL
*040—109. JUDO—SELF DEFENSE AND TUMBLING <i>One-half semester hour.</i>	MS. MORRISON
*040—200. FIELD HOCKEY <i>One-half semester hour.</i>	MISS BOYD
040—201. MISCELLANEOUS ACTIVITIES—SPEEDBALL, TEAM HANDBALL, FOOTBALL VARIATIONS <i>One-half semester hour.</i>	STAFF
040—202. MODERN DANCE <i>One-half semester hour.</i>	MRS. POLEY
*040—205. FOOTBALL <i>One-half semester hour.</i>	MR. BROWN
*040—206. BASEBALL <i>One-half semester hour.</i>	MR. WHATLEY
040—207. BASIC SWIMMING <i>One-half semester hour.</i>	MISS CHLAD

**This course is not offered in 1986-1987.*

COURSES OF INSTRUCTION

040—208. <i>SOFTBALL</i> <i>One-half semester hour.</i>	MR. WHATLEY
040—209. <i>BASKETBALL</i> <i>One-half semester hour.</i>	STAFF
040—210. <i>TRACK AND FIELD</i> <i>One-half semester hour.</i>	MR. WHATLEY
040—300. <i>GYMNASTICS</i> <i>One semester hour.</i>	MS. MORRISON
040—301. <i>GOLF</i> <i>One-half semester hour.</i>	MS. MORRISON
040—302. <i>LIFESAVING</i> <i>One-half semester hour.</i>	DR. DAVIDSON
040—303. <i>ARCHERY AND BOWLING</i> <i>One-half semester hour.</i>	MS. MORRISON
040—304. <i>WATER SAFETY INSTRUCTOR (WSI)</i> <i>One semester hour.</i>	DR. DAVIDSON
040—307. <i>WEIGHT TRAINING AND CONDITIONING</i> <i>One-half semester hour.</i>	MR. BROWN
040—308. <i>ELEMENTARY ACTIVITIES</i> <i>One-half semester hour.</i>	MISS POLEY
040—309. <i>TENNIS</i> <i>One-half semester hour.</i>	MS. MORRISON
040—403. <i>SPECIAL ACTIVITIES</i> <i>One-half semester hour.</i>	STAFF
040—404. <i>SPECIAL ACTIVITIES</i> <i>One semester hour.</i>	STAFF

045—HISTORY

Professors AKIN, DAVIS, PARSONS, VISSER; Associate Professor DOUGHTY (Chairman); Assistant Professor CLARK; Lecturer KANE.

The general objectives of the department of history are to provide an introduction to the history and value systems of Western society and those of other cultures; to provide the historical perspective necessary to the understanding of the human condition and contemporary world affairs; and to provide instruction in methods of historical inquiry and analysis which can be applied in many different fields of endeavor.

For history majors, in addition to providing a sound liberal education, the department seeks to prepare students for post-graduate professional study in the law or public administration; continued study of history at the graduate level; and effective teaching in the secondary schools. For all students, it seeks to inculcate an interest in history and the humanities and an appreciation of the value of their study; to develop practical skills in effective written and oral expression, logical reasoning and research methods; and to raise the general level of social and political awareness.

URSINUS COLLEGE CATALOG

Major in History

Students selecting a major in history must fulfill the basic curricular requirements of Ursinus College as established in the Ursinus Plan, with the stipulation that History 101, 102 be taken as the required humanities course. In addition, the following requirements must be fulfilled:

History 200:	(Historiography and Methodology).
History 213-214:	(United States History);
Non-Western history:	(any two of the following: History 223, 224, 321, 322, 333, 334)
Advanced European History:	(any one of the following: History 301, 302, 303, 304, 305, 306, 307, 308)
Advanced U.S. History:	(any one of the following: History 335, 336, 337, 338, 339, 340)
History seminar:	(any one of the following: History 409, 411, 416, 420, 429, 430, 431, 432)
History electives:	(any two additional history courses)
Humanities	(any three courses above and beyond the college core requirements in English, American or World literature; philosophy; art; music; or foreign languages)
Social Science:	(any three courses above and beyond the college core requirements in anthropology; economics; political science, psychology; or sociology).

To complete graduation requirements, students must pass a comprehensive examination in history.

NOTE: Students seeking secondary school teaching certification in social studies should include the following in their course of study: History 339; Anthropology 101-102 or Sociology 101-102; Economics 101-102; Geography 102; Psychology 101 or 102; and Education 202, 223, 224, 405, 441, and 444.

Minor In History

Students seeking a minor in History must take a minimum of 18 credits in the department, including History 200 and one of the following courses: History 409, 411, 416, 420, 429, 430, 431, 432, or 449. History minors are *not* required to take the comprehensive examination. Students interested in minoring in history must register with the department and plan their course of study in consultation with the department chairman.

045—101. EUROPEAN CIVILIZATION STAFF

An introductory history of ideas and institutions in European civilization for the purpose of providing a general historical background for other courses and for an understanding of contemporary world affairs. Two lectures and one section meeting per week. *Three semester hours.*

045—102. EUROPEAN CIVILIZATION STAFF

Continuation of Course 101. Two lectures and one section meeting per week. *Three semester hours.*

045—200. HISTORIOGRAPHY AND METHODOLOGY DR. CLARK

An introduction to the history of historical study and to modern historical methodology. The goal of the course will be to provide an understanding of what history is, together with practical experience in "doing history." Required for all students majoring or minoring in history. Three hours per week. *Three semester hours.*

COURSES OF INSTRUCTION

045—213. *THE UNITED STATES OF AMERICA* DR. PARSONS

Political and cultural history from colonial status to world power with special emphasis on Pennsylvania. This course is prescribed for all students majoring in history and for any others who are preparing to teach social studies. Three hours per week. *Three semester hours.*

045—214. *THE UNITED STATES OF AMERICA* DR. PARSONS

A continuation of Course 213. Prescribed for all students majoring in history and for any others preparing to teach social studies. Three hours per week. *Three semester hours.*

045—223. *TRADITIONAL EAST ASIAN SOCIETY AND CULTURE* DR. CLARK

An introduction to the society and culture of China and Japan in the late traditional era (17th to 19th centuries) prior to the collapse of the old orders. Focuses on governmental structure, social and economic order, and late traditional cultural developments. Three hours per week. *Three semester hours.*

045—224. *THE MODERNIZATION OF EAST ASIAN SOCIETY AND CULTURE* DR. CLARK

A continuation of 223, focusing on the changes in Chinese and Japanese society and culture since the mid-19th century, which built toward World War II and the 1949 Communist Revolution in China. Three hours per week. *Three semester hours.*

*045—301. *STUDIES IN MEDIEVAL HISTORY* DR. VISSER

An examination of the development of the institutions controlling medieval society, i.e. the Church and the nobility. Selected writings from ecclesiastical authors and secular poets and from German and French epics will be read in translation. Three hours per week. *Three semester hours.* (Alternates with 303 and 319.)

*045—302. *STUDIES IN MEDIEVAL HISTORY* DR. VISSER

An examination of the forces which changed medieval society; e.g. the rise of cities, the emergence of universities, and the monetization of the economy. Selected contemporary writings will be read in translation. Three hours per week. *Three semester hours.* (Alternates with 304 and 320.)

045—303. *STUDIES IN THE RENAISSANCE ERA* DR. VISSER

An examination of the cultural, economic, and social aspects of the Renaissance and their interdependence. Contemporary writings will be used in translation. Three hours per week. *Three semester hours.* (Alternates with 319 and 301.)

045—304. *16th CENTURY STUDIES* DR. VISSER

An examination of the revolution in Christianity and its impact on the social, economic, and political institutions of the age. Contemporary writings will be used in translation. Three hours per week. *Three semester hours.* (Alternates with 320 and 302.)

045—305. *STATE AND SOCIETY IN EARLY MODERN EUROPE* DR. DOUGHTY

A study of the development of absolute monarchy and the modern state in their social, economic, and intellectual context. Three hours per week. *Three semester hours.* (Alternates with 307.)

045—306. *THE AGE OF REVOLUTION* DR. DOUGHTY

A study of the "Dual Revolution"—industrial and political—of the period 1780-1880 and its impact upon European society. Three hours per week. *Three semester hours.* (Alternates with 308.)

URSINUS COLLEGE CATALOG

- *045—307. *THE 20th CENTURY* DR. DOUGHTY
A study of the impact of industrialization, neo-imperialism, and nationalism upon the European peoples and their overseas empires in the years leading up to and directly following the First World War. Not open to first-year students. Three hours per week. *Three semester hours.* (Alternates with 305.)
- *045—308. *THE 20th CENTURY* DR. DOUGHTY
A continuation of History 307 covering the events leading up to and following the Second World War and the problems of contemporary world history. Not open to first-year students. Three hours per week. *Three semester hours.* (Alternates with 306.)
- *045—309. *THE MAKING OF BRITAIN* DR. DOUGHTY
A survey of British history from the Anglo-Saxon period to 1688, with emphasis on political and constitutional developments. Three hours per week. *Three semester hours.* (Alternates with 311.)
- *045—310. *BRITAIN AND THE BRITISH EMPIRE* DR. DOUGHTY
The history of Britain and the British Empire and Commonwealth from 1689 to the present, with emphasis on political and constitutional developments. Three hours per week. *Three semester hours.* (Alternates with 312.)
- 045—311. *PRE-INDUSTRIAL BRITAIN* DR. DOUGHTY
A study of selected topics in the social and economic history of the British Isles from the earliest Celtic settlements to the seventeenth century. Three hours per week. *Three semester hours.* (Alternates with 309.)
- 045—312. *BRITAIN: THE FIRST INDUSTRIAL NATION* DR. DOUGHTY
British social and economic history from the beginning of the Industrial Revolution to the present, with emphasis on the social effects of Britain's rise and eventual decline as an industrial power. Three hours per week. *Three semester hours.* (Alternates with 310.)
- 045—315. *HISTORY OF UNITED STATES FOREIGN RELATIONS* MR. DAVIS
A study of United States foreign relations from revolutionary era to the present. Three hours per week. *Three semester hours.*
- *045—316. *WAR AND DIPLOMACY IN EUROPE* DR. DOUGHTY
A study of the evolution of modern statecraft and warfare from the Renaissance to the 20th century. Diplomacy, foreign policy, military organization and strategy will be examined against the background of intellectual, social, and technological change. Three hours per week. *Three semester hours.* (Given in the spring semester, alternate years.)
- *045—319. *STUDIES IN ANCIENT HISTORY* DR. VISSER
An examination of the emergence of religious and intellectual concepts in the Ancient Near East, with an emphasis on their definition by the Hebrews. Contemporary writings will be used in translation. Three hours per week. *Three semester hours.* (Alternates with 301 and 303.)
- *045—320. *STUDIES IN ANCIENT HISTORY* DR. VISSER
An examination of the emergence of intellectual, legal, and social concepts, with emphasis on their formulation as the roots of Western civilization. Contemporary writings will be read in translation. Three hours per week. *Three semester hours.* (Alternates with 302 and 304.)

*This course is not offered in 1986-1987.

COURSES OF INSTRUCTION

045—321. *THE MIDDLE EAST* MR. DAVIS
 A study of the Byzantine, Persian and Moslem empires in the middle ages. Three hours per week. *Three semester hours.* (Alternates with 325.)

045—322. *THE MIDDLE EAST* MR. DAVIS
 The Moslem World and the Middle East under the Ottoman Empire and in modern times. Three hours per week. *Three semester hours.* (Alternates with 326.)

*045—325. *POLITICAL AND SOCIAL HISTORY OF RUSSIA* MR. DAVIS
 An examination of the political, social, economic, and cultural conditions of the medieval and modern periods of Russian development through the imperial era to the end of the 19th century. Three hours per week. *Three semester hours.* (Alternates with 321.)

*045—326. *POLITICAL AND SOCIAL HISTORY OF RUSSIA* MR. DAVIS
 An examination of the history of the Soviet Union, the sources of its institutions, and its role in the contemporary world. Three hours per week. *Three semester hours.* (Alternates with 322.)

045—333. *ORIGINS OF EAST ASIAN CIVILIZATION* DR. CLARK
 A selective introduction to the origins of East Asian societies and cultures. Topics to be considered may include religious and intellectual traditions, evolution of political and social orders, and the like. Three hours per week. *Three semester hours.* (Given in alternate years.)

045—334. *SOCIETY AND REVOLUTION IN SOUTHEAST ASIA* DR. CLARK
 An examination of the origins of conflict in Southeast Asia from the 19th century to the present. Will approach the issue from the perspective of the societies themselves in an attempt to understand the domestic stresses, resulting from both internal and external change, which produced the post-World War II upheavals, as well as the motivations of the Western powers that intervened. Three hours per week. *Three semester hours.* (Given in alternate years.)

*045—335. *COLONIAL AMERICA* DR. PARSONS
 Economic and social beginnings of colonial settlements in North America through the achievement of independence in 1783. Special attention to demographic change. Three hours per week. *Three semester hours.* (Alternates with 339.)

*045—336. *CIVIL WAR AND RECONSTRUCTION* DR. PARSONS
 Social and economic background; sectionalism and war, with emphasis upon logistical and demographic problems and results. Three hours per week. *Three semester hours.* (Alternates with 340.)

045—337. *THE EMERGENCE OF MODERN AMERICA* DR. AKIN
 An examination of social and economic change in the United States from the 1880's to the 1920's. Three hours per week. *Three semester hours.*

045—338. *RECENT UNITED STATES HISTORY* DR. AKIN
 An examination of social and economic change in the United States from the 1920's to the contemporary era. Three hours per week. *Three semester hours.*

045—339. *MINORITIES IN AMERICA* DR. PARSONS
 A study of minority groups in American history and society with particular attention to migration patterns, problems of identity and adjustment, and minority contributions to American life. Three hours per week. *Three semester hours.* (Alternates with 335.)

*This course is not offered in 1986-1987.

URSINUS COLLEGE CATALOG

- 045—340. *WESTWARD MOVEMENT* DR. PARSONS
Lure of the West and the ensuing settlement and development, to the closing of the Frontier. Social and economic implications and problems. Three hours per week. *Three semester hours.* (Alternates with 336.)
- 045—341. *ORIGINS OF THE INDUSTRIAL REVOLUTION* DR. VISSER
An examination of the origins and preconditions of the "Industrial Revolution" in the Western world and the changes in technology and business practices which resulted from it. Examples will be taken from Western Europe. Three hours per week. *Three semester hours.* (Alternates with 409.)
- 045—342. *COMPARATIVE ECONOMIC HISTORY* DR. VISSER
An examination of the political, social and demographic consequences of economic change and a comparative analysis of their effects in 19th and 20th century Germany and the United States. Three hours per week. *Three semester hours.* (Alternates with 411.)
- 045—381. *HISTORY INTERNSHIP* STAFF
An off-campus academic/work experience under the supervision of an internship adviser and an on-site supervisor. Contact the chairman of the department for further details. Prerequisites: junior standing, nine credits in history and approval of a faculty internship adviser. Minimum of eight hours per week. *Three semester hours.*
- *045—409. *SEMINAR TOPICS IN THE HISTORY OF THE CITY* DR. VISSER
Students will explore the emergence of the city as a force of social, economic and cultural change by means of a comparative study of representative cities in the ancient, medieval, and modern worlds. Prerequisite, History 200 or equivalent. Three hours per week. *Three semester hours.* (Alternates with 341.)
- *045—411. *SEMINAR: TOPICS IN THE HISTORY OF SCIENTIFIC IDEAS*
DR. VISSER
Students will explore the relationship between socio-cultural ideologies and the development of scientific ideas by means of a comparative study of several outstanding scientists from successive periods in history. Prerequisite, History 200 or equivalent. Three hours per week. *Three semester hours.* (Alternates with 342.)
- *045—416. *SEMINAR: TOPICS IN THE AMERICAN REVOLUTION*
DR. PARSONS
Students explore the major movements and minutiae of the war for American independence as political, economic and social upheaval, while also a civil war within the British Empire. Innovations and emergency measures among a people bound for a new self-determination. Bibliography of authors. Prerequisite, History 200 or equivalent. Three hours per week. *Three semester hours.* (Replaces 432 in specified years.)
- *045—420. *SEMINAR: TOPICS IN THE HISTORY OF MIGRATIONS*
DR. PARSONS
Students will identify and examine in detail both emigration patterns and immigration data as well as the interrelation of the two. Cause and effect of large-scale population shifts and an intensive study of personal or family migrations and settlement. Prerequisite, History 200 or equivalent. Three hours per week. *Three semester hours.* (Replaces 432 in specified years.)

*This course is not offered in 1986-1987.

COURSES OF INSTRUCTION

045—429. SEMINAR IN THE HISTORY OF EUROPE, OR ASIA

DR. DOUGHTY, DR. CLARK

Preparation and discussion of research papers. Open to third-year and fourth-year students with the permission of the instructor. Prerequisite, History 200 or equivalent. Three hours per week. *Three semester hours.*

045—430. SEMINAR IN THE HISTORY OF ASIA, OR EUROPE

DR. CLARK, DR. DOUGHTY

Preparation and discussion of research papers. Open to third-year and fourth-year students with the permission of the instructor. Three hours per week. *Three semester hours.*

045—431. SEMINAR IN THE HISTORY OF AMERICA

DR. AKIN, DR. PARSONS

Preparation and discussion of research papers. Open to third-year and fourth-year students with the permission of the instructor. Prerequisite, History 200 or equivalent. Three hours per week. *Three semester hours.*

045—432. SEMINAR IN THE HISTORY OF AMERICA

DR. AKIN, DR. PARSONS

Preparation and discussion of research papers. Open to third-year students with the permission of the instructor. Prerequisite, History 200 or equivalent. Three hours per week. *Three semester hours.*

045—449. RESEARCH

STAFF

Independent research, under the guidance of an advisor, directed toward the production of a historical project or paper. Open only to fourth-year students with the permission of the chairman of the department of history. Prerequisite, History 200 or equivalent. *Three semester hours.*

045—491. RESEARCH/INDEPENDENT WORK

STAFF

This course is open to candidates for departmental honors and to other students with the permission of the department chairman. Prerequisite, one of the following: History Seminar 409, 411, 416, 420, 429, 430, 431, or 432. *Three semester hours.*

045—492. RESEARCH/INDEPENDENT WORK

STAFF

A continuation of course 491. Prerequisite, course 491. *Three semester hours.*

INTERNATIONAL RELATIONS

See Combined Majors

050—MATHEMATICS AND COMPUTER SCIENCE

Professors JESSUP, SCHULTZ; *Associate Professors* BREMILLER, COLEMAN, HAGEMELGANS, SHUCK (*Chairman*) *Assistant Professor* NELSEN; *Instructor* ILLOWSKY; *Lecturers* JOHNSON, SHAW.

The general aims of the department of mathematics and computer sciences are (1) to give the students a grasp of the ideas and methods of mathematics and computer science; (2) to develop an understanding and appreciation of mathematics as an abstract deductive system; (3) to give the students an appreciation of the historical importance of mathematics in the progress of civilization, both past and present; and (4) to provide the students with sufficient skills to enable them to apply their knowledge to related fields of study.

For mathematics majors, the department aims to provide stimulation and preparation for (1) continued study at the graduate level; or (2) effective teaching in the secondary schools; or (3) employment in industrial research, statistics, computing, or actuarial positions. For other majors, it seeks to provide the mathematical competence required by the increasing quantitative emphasis in many of these disciplines.

URSINUS COLLEGE CATALOG

REQUIREMENTS FOR MAJORS

A student majoring in Mathematics is required to take Physics 111, 112, and Math 111, 112, 211, 235, 236, 271, 311 and 335.

Each major also is required to complete at least one of the following four area concentrations.

I. Mathematics

This program is recommended for those planning to do post-graduate work in mathematics. The required courses are Math 312, 321, 336, 411.

II. Applied Mathematics

This program is recommended for those planning to seek jobs in industry. The required courses are Math 212, and at least three of 341, 342, 411, 461, 462.

III. Mathematics Education

This program is recommended for those preparing to be teachers. The required courses are Math 322, 341 and at least two of 321, 342, 434, 461. This concentration satisfies the teacher certification requirements for mathematics. The College also offers a joint certification program in mathematics-physics. Details may be obtained from the departments of education, mathematics and computer science and physics.

Those students choosing the mathematics education concentration may substitute Math 336 for 311, or 312 for 335.

IV. Computer Science

This program is recommended for those preparing for work in the computing field. The required courses are Math 272, 371, 372 and at least one of 471, 472.

Advanced Concentration

Mathematics majors not minoring in another discipline are urged strongly to take an advanced concentration. Such a program consists of an additional 15 semester hours of math courses above Math 211, but excluding 241-242.

For example, the student may elect to satisfy the requirements of a second area of concentration from the list of four above. Alternatively, courses from several areas in mathematics and computer science may be selected to achieve breadth. In any case, the program must be approved by the student's adviser.

INTERDISCIPLINARY MAJOR

The mathematics and computer science department participates in an interdisciplinary major in applied mathematics/economics. For additional information and course requirements, see the listings under combined majors.

MINOR CONCENTRATIONS

A minor concentration in computer science consists of math 102 or 111; 241 or 341; 271; 272; and six credits chosen from 371, 372, 471, 472. Students are urged to select 371, 372, if possible. The math 102 or 111 requirement may be waived by the department chairman.

A minor concentration in mathematics consists of Math 111, 112, 211, 235; and nine additional credits in math, excluding 101, 102, 110, 171, 172, 241, 242, 271, 272, 371, 372, 471, 472.

A minor concentration in quantitative methods consists of math 111, 112, 235, 241, 242, and one course chosen from 171, 172, 271, 272, 371, 372, 471, 472.

A minor concentration in statistics consists of math 111, 112, 211, 241, 242, 271, 341, 342.

COURSES OF INSTRUCTION

050—101. COLLEGE ALGEBRA STAFF

A review of algebra, functions and graphs, exponential and logarithmic functions. Matrix algebra. This course prepares the student for Math 102. Three hours per week. *Three semester hours.*

Notes: A student may not receive credit for both Math 101 and 110. This course does not satisfy the college mathematics requirement.

050—102. APPLIED CALCULUS STAFF

Differential and integral calculus of algebraic, exponential and logarithmic functions. Emphasis on applications in business and the social sciences. Offered both semesters. Three hours per week. *Three semester hours.*

050—110. PRECALCULUS STAFF

A review of algebra, functions and graphs, exponential and logarithmic functions, circular and trigonometric functions. This course prepares the student for Math 111. Three hours per week. *Three semester hours.*

Notes: A student may not receive credit for both Math 101 and 110. This course does not satisfy the college mathematics requirement.

050—111. CALCULUS AND ANALYTIC GEOMETRY I STAFF

A study of the calculus of functions of one variable, with analytic geometry and applications. Offered both semesters. Three hours per week. *Three semester hours.*

050—112. CALCULUS AND ANALYTIC GEOMETRY II STAFF

A continuation of Math 111. Prerequisite, Math 111. Offered both semesters. Three hours per week. *Three semester hours.*

050—171. INTRODUCTION TO COMPUTER PROGRAMMING I MR. BREMILLER

The computer as a problem-solving tool, with emphasis on design of structured algorithms and their implementation in a high-level language such as structured BASIC. Recommended (along with Math 172) for those who want to learn programming skills to apply to a discipline other than computer science. Offered both semesters. Three hours per week. *Three semester hours.*

050—172. INTRODUCTION TO COMPUTER PROGRAMMING II MR. BREMILLER

A continuation of Math 171. Files, character-string manipulation and multi-dimensional arrays and matrices. Prerequisite, Math 171. Three hours per week. *Three semester hours.*

050—211. INTERMEDIATE CALCULUS DR. HAGELGANS

A continuation of Math 112, with emphasis on functions of more than one variable, including three-dimensional geometry, partial differentiation, and multiple integration, introduction to vector calculus; study of infinite series; applications. Prerequisite, Math 112. Three hours per week. *Three semester hours.*

050—212. DIFFERENTIAL EQUATIONS DR. SHUCK

Solutions of ordinary differential equations of first and second order, with applications to problems in the physical sciences. Additional topics chosen from power series, solutions, systems of linear equations, numerical methods, Laplace transforms. Prerequisite, Math 211. Three hours per week. *Three semester hours.*

050—235. LINEAR ALGEBRA DR. NESLEN

Systems of linear equations, matrix theory, linear transformations, eigenvectors and eigenvalues, inner product, orthogonal transformations, quadratic forms, applications. Prerequisite, Math 112 or permission of the instructor. Three hours per week. *Three semester hours.*

URSINUS COLLEGE CATALOG

- 050—236. *INTRODUCTION TO ABSTRACT MATHEMATICS* DR. NESLEN
This course is designed to bridge the gap between problem-solving, computation-oriented introductory courses, and abstract, proof-oriented advanced courses. Emphasis will be placed on the language of contemporary mathematics (including the proper way to write mathematics), and on the nature of mathematical reasoning. Topics studied may include axiomatic systems, logic, set theory and number systems. Prerequisite, Math 112 or permission of the instructor. Three hours per week. *Three semester hours.*
- 050—241. *STATISTICS I* DR. COLEMAN, DR. SHUCK
Statistical methods of studying data, measures of central tendency and dispersion, probability, and distributions including: binomial, normal, and Student's *t*; hypothesis testing. Offered both semesters. Three hours per week. *Three semester hours.*
- 050—242. *STATISTICS II* DR. COLEMAN
A continued study of basic statistical techniques including basic concepts of experimental design, techniques of analysis of variance, methods of regression analysis, linear models, chi-square tests and non-parametric statistics. Prerequisite, Math 241. Three hours per week. *Three semester hours.*
- 050—271. *COMPUTER PROGRAMMING I* DR. JESSUP, DR. COLEMAN
Computer programming with a high-level language. Problem-solving methods and algorithm development. Design, coding, debugging and documentation of programs. Emphasis on programming style. Prerequisite, Math 102 or 111 or 171. Three hours per week. *Three semester hours.*
- 050—272. *COMPUTER PROGRAMMING II* DR. JESSUP
A continuation of Math 271. Larger programs. Introduction to algorithm analysis and data structures. Prerequisite, Math 271. Three hours per week. *Three semester hours.*
- 050—311. *INTRODUCTION TO ANALYSIS I* DR. NESLEN
A theoretical treatment of the concepts of limits, continuity, indeterminate forms, sequences, series, definite integrals, multiple integrals. Includes an introduction to the topology of Euclidean space, uniform continuity and uniform convergence, power series and Taylor's theorem. Prerequisite, Math 211 and either 236 or permission of the instructor. Three hours per week. *Three semester hours.*
- 050—312. *INTRODUCTION TO ANALYSIS II* DR. SHUCK
A continuation of Math 311, with extensions to partial derivatives, differentials, chain rules, inverse and implicit function theorems, change of variables in multiple integrals, arc length, surface area, extremal properties of functions of several variables. Prerequisite, Math 235, 311, and either 236 or permission of the instructor. Three hours per week. *Three semester hours.*
- *050—321. *INTRODUCTION TO TOPOLOGY* MR. BREMILLER
Elementary point set topology; metric spaces; topological spaces, separation axioms, compactness, connectedness. Prerequisite, Math 236 or permission of the instructor. Three hours per week. *Three semester hours.*
- 050—322. *FUNDAMENTALS OF GEOMETRY* MR. BREMILLER
Axiomatic development, introduction to non-Euclidean geometry, projective geometry and modern geometry. Prerequisite, permission of the instructor. Three hours per week. *Three semester hours.* (Not scheduled for 1987-1988.)

*This course is not offered in 1986-1987.

050—335. *MODERN ALGEBRA I* DR. HAGELGANS

An introduction to algebraic structures, with emphasis in the first semester on groups. Subgroups, quotient groups, homomorphisms, isomorphism theorems, Cayley's theorem, permutation groups. Prerequisite, Math 236. Three hours per week. *Three semester hours.*

050—336. *MODERN ALGEBRA II* DR. HAGELGANS

A continuation of Math 335. Rings, unique factorization domains, vector spaces, fields. Applications to Fermat's last theorem, constructions with straight-edge and compass, solution of equations by radicals. Classical origins of modern abstract algebra. Prerequisite, Math 335. Three hours per week. *Three semester hours.*

050—341. *PROBABILITY* DR. COLEMAN

An introduction to probability theory; discrete and continuous probability distributions; moments and moment-generating functions of random variables. Prerequisite, Math 211. Three hours per week. *Three semester hours.*

050—342. *MATHEMATICAL STATISTICS* DR. COLEMAN

The mathematical background of modern statistics, including the development of sampling distributions, the theory and application of estimation, tests of hypotheses, regression and correlation, and analysis of variance. Prerequisite, Math 341. Three hours per week. *Three semester hours.*

050—371. *DATA STRUCTURES AND ALGORITHMS* DR. SHUCK

Data structures used in computers, including strings, linear lists, linked lists, arrays and tree structures. Algorithms for sorting, searching and other manipulations of data. Prerequisite, Math 272. Three hours per week. *Three semester hours.*

*050—372. *COMPUTER ORGANIZATION* DR. HAGELGANS

Architecture of digital computer, number systems, arithmetic operations, codes, switching algebra and logic gates. Prerequisite, Math 171 or Math 271. Three hours of lecture and two hours of laboratory per week. *Four semester hours.*

050—411. *FUNCTIONS OF A COMPLEX VARIABLE* MR. BREMILLER

An introduction to the theory of analytic functions, integrals of complex functions, conformal mapping, harmonic functions. Taylor's and Laurent's series, residue theory, geometry of elementary functions. Prerequisite, Math 211. Three hours per week. *Three semester hours.* (Not scheduled for 1987-1988.)

050—434. *THEORY OF NUMBERS* DR. SHUCK

Divisibility; unique factorization; congruences; theorems of Fermat, Euler, and Wilson; primitive roots; quadratic reciprocity; Diophantine equations; Fermat's conjecture; sums of squares; distribution of primes. Prerequisite, permission of the instructor. Three hours per week. *Three semester hours.* (Not scheduled for 1987-1988.)

050—451. *TOPICS IN ADVANCED MATHEMATICS I* DR. SHUCK

A course designed to acquaint the student with modern trends in advanced topics in mathematics and its applications. The course will be adapted to the students' preferences and needs. Prerequisite, permission of the instructor. Three hours per week. *Three semester hours.* (Not scheduled for 1987-1988.)

*050—452. *TOPICS IN ADVANCED MATHEMATICS II* MR. BREMILLER

A course designed to acquaint the student with modern trends in advanced topics in mathematics and its applications. The course will be adapted to the students' preferences and needs. Prerequisite, permission of the instructor. Three hours per week. *Three semester hours.*

*This course is not offered in 1986-1987.

URSINUS COLLEGE CATALOG

***050—461. MATHEMATICAL MODELS** DR. JESSUP

Mathematical methods are used to develop models for use in fields outside of Mathematics with emphasis on the social and biological sciences. Topics such as Digraphs, Graphs, Markov Chains and Game Theory will be studied. Prerequisite, Math 212 and an ability to program. Three hours per week. *Three semester hours.*

***050—462. NUMERICAL ANALYSIS** DR. JESSUP

Selected topics from numerical analysis are presented. These may include solving systems of linear equations, linear and nonlinear differential equations, numerical integration and differentiation, eigenvalue problems, error analysis, interpolation and approximation. The computer will be used. Prerequisites, Math 212 and an ability to program. Three hours per week. *Three semester hours.*

050—464. SEMINAR IN APPLIED MATHEMATICS/ECONOMICS STAFF

Topics in mathematics of particular importance in economics, with applications. Offered jointly by the department of mathematics and computer science and the department of economics and business administration. A research paper will be required. Prerequisites, Math 112, and Economics and Business Administration 325, 326, or permission of the instructor. *Three semester hours.*

This course is the same as Economics and Business Administration 464.

***050—471. TOPICS IN COMPUTING I** DR. HAGELGANS

A detailed study of some advanced topics in computer science such as file and data base management, operating systems, compiler design and formal languages. Prerequisite, Math 272 or permission of the instructor. Three hours per week. *Three semester hours.*

050—472. TOPICS IN COMPUTING II DR. SHUCK

A spring semester course which will cover topics similar to those listed in Math 471. Prerequisites, Math 272 or permission of instructor. Three hours per week. *Three semester hours.*

050—491. RESEARCH/INDEPENDENT WORK STAFF

Independent investigation of an area of mathematics and computer science not covered in regular courses. Prerequisite, written consent of a member of the staff to serve as an adviser. *Three semester hours.*

050—492. RESEARCH/INDEPENDENT WORK STAFF

Content and prerequisites as in Math 491. *Three semester hours.*

MODERN LANGUAGES

Associate Professors CLOUSER, ESPADAS, LUCAS (Chairman); Assistant Professors EATON, NOVACK, SOUFAS, THELEN; Visiting Assistant Professors HALL, STOPKIE; Lecturers HANKS, KANAGY.

The modern language department aims, in its elementary and intermediate courses, to develop the students' linguistic ability and understanding of a foreign culture and to introduce them to its literature. More advanced courses seek to perfect the use of the oral and written language, to study foreign societies and civilizations, and to explore the foreign literature in order to develop faculties of analysis and aesthetic judgment.

**This course is not offered in 1986-1987.*

Major in Modern Languages

Majors interested in international affairs, business or diplomacy should choose appropriate course programs from the economics and business administration department or the political science department. Similarly, students with international interests who are majors in other departments should formulate a minor in French, Spanish, German, or romance languages to suit their goals.

Students who are preparing to teach a modern language in secondary school should contact the education department so that an appropriate program may be established. They are required to study a second language through the intermediate level.

The varied activities of the language clubs add to the department's offerings. Language majors are encouraged to supplement their work at Ursinus by spending a summer, a semester or an entire year in a foreign country with a program approved by the department.

Modern Language Minors

A minor concentration in French consists of 305, 306, and twelve additional credits of French at the 300 or 400 level, excluding 331.

A minor concentration in German consists of German 305, 306, and twelve credits of German at the 300 or 400 level.

A minor concentration in Spanish consists of Spanish 301, 302, and twelve additional credits of Spanish at the 300 or 400 level, excluding Spanish 332.

A minor concentration in Latin American studies consists of Spanish 302, 306, 332, Anthropology 211; and two of the following courses: Spanish 409, 412, 451, Political Science 242, 344, 355, 357.

A minor concentration in romance languages consists of nine credits of French at the 300 or 400 level, excluding French 331, and nine credits of Spanish at the 300 or 400 level, excluding Spanish 332.

054—ENGLISH AS A SECOND LANGUAGE

The ESL courses are meant to be taken during the first year at Ursinus during which many foreign students may have adjustment problems.

054—101 *ENGLISH AS A SECOND LANGUAGE* STAFF

A developmental course in English for non-native speakers. Admission by permission of the instructor. Three hours per week. *Three semester hours.*

054—102 *ENGLISH AS A SECOND LANGUAGE* STAFF

Continuation of ESL 101. Three hours per week. *Three semester hours.*

086—FRENCH

French majors are required to take at least 30 semester hours in French above the 200 level. Majors must select a variety of courses in order to create a balance between language, literature, and civilization in their program. French 305, 306 and at least one 400 level course in French, History 101, 102 and six semester hours of advanced history or Fine Arts 311 and 312, Music 211 and 212 are required. It is strongly recommended that all majors study a second language through the intermediate level. Students preparing for graduate study should elect the following courses: English 203, 204, Latin 101, 102, 203, 204 and two 300-level courses in a second language. Students planning to teach are required to take French 428 and a second language through the intermediate level. In the senior year, majors must pass a comprehensive examination.

URSINUS COLLEGE CATALOG

- 086—101. *ELEMENTARY FRENCH* STAFF
 An introduction to French language and grammar with particular emphasis on comprehension, speaking, reading and writing. Three hours per week plus one hour of language laboratory per week. *Three semester hours.*
- 086—102. *ELEMENTARY FRENCH* STAFF
 Continuation of French 101. Three hours per week plus one hour of language laboratory per week. *Three semester hours.*
- 086—200. *SUMMER STUDY IN FRANCE* STAFF
 A four-week travel and study tour of France directed by members of the Ursinus College faculty. Offered annually, mid-May through mid-June. Prerequisite, French 102 or permission of the instructor. *Three semester hours.*
- 086—203. *INTERMEDIATE FRENCH* STAFF
 A review of grammar, conversation and vocabulary development, writings and discussions based on cultural, social and literary selections. Prerequisite, French 102 or equivalent. Three hours per week plus one hour of language laboratory per week. *Three semester hours.*
- 086—204. *INTERMEDIATE FRENCH* STAFF
 Continuation of French 203. Three hours per week plus one hour of language laboratory per week. *Three semester hours.*
- 086—300. *SUMMER STUDY IN FRANCE* STAFF
 A four-week travel and study tour of France directed by members of the Ursinus College faculty. Offered annually, mid-May through mid-June. Prerequisite, French 204 or permission of the instructor. *Three semester hours.* (NOTE: Students who have received credit for French 200 cannot receive credit for French 300.)
- 086—305. *FRENCH LITERATURE FROM THE MIDDLE AGES TO THE 18TH CENTURY* DR. LUCAS
 Major French writers and their contribution to world culture and civilization from the Middle Ages to the Revolution. Prerequisite, French 204 or equivalent. Three hours per week. *Three semester hours.*
- 086—306. *FRENCH LITERATURE OF THE 19TH AND 20TH CENTURIES* DR. HALL
 Continuation of French 305. From 1789 to the present. Prerequisite, French 204 or equivalent. Three hours per week. *Three semester hours.*
- 086—313. *FRENCH CIVILIZATION* DR. LUCAS
 This course investigates French culture and society from the *Ancien Regime* to de Gaulle's Republic. Readings will be selected from historical and literary documents. Prerequisite, French 315, 316 or permission of the instructor. Three hours per week. *Three semester hours.*
- 086—314. *FRANCE TODAY* DR. HALL
 Cultural, political, economic and social aspects of contemporary France. Prerequisite, French 315, 316 or permission of the instructor. Three hours per week. *Three semester hours.*
- 086—315. *CONVERSATION AND COMPOSITION* DR. HALL
 Practice in oral elements of the language, written composition, and grammar. Topics relating to French culture and society will be emphasized. Prerequisite, French 204 or equivalent. Three hours per week. *Three semester hours.*

**This course is not offered in 1986-1987.*

COURSES OF INSTRUCTION

- 086—316. *CONVERSATION AND COMPOSITION* DR. HALL
 Continuation of French 315. Class discussions are based on cultural, social and literary texts, accompanied by oral and written presentations. Prerequisite, French 204 or equivalent. Three hours per week. *Three semester hours.*
- 086—318. *COMMERCIAL AND ECONOMIC FRENCH* DR. NOVACK
 Introduction to the economic situation, business organization and commercial practices of France and French-speaking countries. Prerequisite, French 315, 316 or permission of the instructor. Three hours per week. *Three semester hours.*
- *086—325. *ADVANCED CONVERSATION* DR. HALL
 This course is designed for the perfection of previous conversation skills through discussions on a wide range of topics related to French life and contemporary society. Prerequisite, French 315, 316 or permission of the instructor. Three hours per week. *Three semester hours.*
- *086—326. *ADVANCED COMPOSITION* DR. HALL
 This course is designed for the development of advanced writing skills through class discussions and composition assignments based on contemporary French writings and issues. Prerequisite, French 315, 316 or permission of the instructor. Three hours per week. *Three semester hours.*
- 086—331. *FRENCH LITERATURE IN TRANSLATION* STAFF
 A study of topics in French literature. Future topics: Paris, the study of a city; The comic tradition in French literature; French autobiographical writings; The French short story. Specific topics will be announced in advance. Not open to freshmen. Open to majors, but does not fulfill departmental requirements. Three hours per week. *Three semester hours.*
- 086—381. *INTERNSHIP* STAFF
 An off-campus academic/work experience under the supervision of an internship advisor and an on-site supervisor. Contact the chairman of the department for further details. Prerequisite, junior standing, nine credits in French, and approval of a faculty internship advisor. Eight to ten hours per week. *Three semester hours.*
- *086—411. *19th CENTURY FRENCH NOVEL* DR. NOVACK
 The development of the French novel of the nineteenth century, with special emphasis on Benjamin Constant, Stendhal, Balzac, Flaubert, and Zola. Prerequisite, French 305, 306 or permission of the instructor. Three hours per week. *Three semester hours.*
- 086—412. *MODERN FRENCH POETRY* DR. LUCAS
 An analysis and interpretation of the poetry of Baudelaire, Mallarmé, Verlaine, Rimbaud, Apollinaire, the Surrealists and the modern poets. Prerequisite, French 305, 306 or permission of the instructor. Three hours per week. *Three semester hours.*
- 086—413. *20th CENTURY FRENCH NOVEL* DR. LUCAS
 Authors studied include Proust, Gide, Malraux, Sartre, Camus, and the writers of the new novel. Prerequisite, French 305, 306 or permission of the instructor. Three hours per week. *Three semester hours.*
- *086—419. *MEDIEVAL AND RENAISSANCE LITERATURE* DR. HALL
 Works from the medieval epic and courtly romance through the Renaissance philosophical essay. Readings include works of Chretien de Troyes, Villon, the Pleiade, Rabelais and Montaigne. Prerequisite, French 305, 306 or permission of the instructor. Three hours per week. *Three semester hours.*

*This course is not offered in 1986-1987.

URSINUS COLLEGE CATALOG

***086—420. 17TH AND 18TH CENTURY PROSE** DR. STOPKIE

The individual and society: discoveries about human nature, liberty, reason and their limits. Readings in Pascal, La Rochefoucauld, Voltaire, Diderot, Rousseau. Prerequisite, French 305, 306 or permission of the instructor. Three hours per week. *Three semester hours.*

***086—425. FRENCH THEATER FROM THE MIDDLE AGES TO THE 18TH CENTURY** DR. HALL

The development of the theater from its origin to the Revolution with special emphasis on the works of Corneille, Moliere and Racine. Prerequisite, French 305, 306 or permission of the instructor. Three hours per week. *Three semester hours.*

***086—426. FRENCH THEATER OF THE 19TH AND 20TH CENTURY** DR. LUCAS

Readings from the Romantic drama to the theater of the absurd. Some of the authors studied are Hugo, Musset, Jarry, Cocteau, Giraudoux, Camus, Beckett, Genet, and Duras. Prerequisite, French 305, 306 or permission of the instructor. Three hours per week. *Three semester hours.*

086—428. ADVANCED GRAMMAR STAFF

Basic linguistic principles as applied to phonetics, morphology and syntax with special emphasis on the problems related to the teaching of the language. Prerequisite, French 315, 316 or permission of the instructor. Three hours per week. *Three semester hours.*

086—451, 452. ADVANCED SEMINAR IN FRENCH STAFF

Study of topics in French literature and culture. Recent topics have included twentieth century women writers; the literature of Quebec; French political writers. Future topics will be determined according to interest and announced in advance. Prerequisite, one 400-level course in French or permission of the instructor. Three hours per week. *Three semester hours.*

086—491. RESEARCH/INDEPENDENT WORK STAFF

This course is open to candidates for departmental honors and to other students with the permission of the department chairman. *Three semester hours.*

086—492. RESEARCH/INDEPENDENT WORK STAFF

A continuation of course 491. Prerequisite, course 491 and permission of the department chairman. *Three semester hours.*

035—GERMAN

German majors are required to take at least 30 semester hours in German beyond the 200 level. Majors must select a variety of courses in order to create a balance between language, literature, and civilization in their programs. German 305, 306 and at least one 400 level course in German, History 101, 102 and six semester hours of advanced history or Fine Arts 311 and 312, Music 211 and 212 are required. It is strongly recommended that all majors study a second language through the intermediate level. Students preparing for graduate study elect French and/or Latin as supplemental languages and the following complementary courses from other departments: History 301, 302, 304, 307, 308, 316, 327, 328; English 203, 204, 209, 210, 324, 326; Philosophy 101, 102. Students planning to teach are required to take German 428 and a second language through the intermediate level. In the senior year, majors must pass a comprehensive examination.

**This course is not offered in 1986-1987.*

COURSES OF INSTRUCTION

035—101. *ELEMENTARY GERMAN* STAFF

An introduction to German language and grammar with particular emphasis on comprehension, speaking, reading, and writing. Three hours per week plus one hour of language laboratory per week. *Three semester hours.*

035—102. *ELEMENTARY GERMAN* STAFF

Continuation of German 101. Three hours per week plus one hour language laboratory per week. *Three semester hours.*

035—203. *INTERMEDIATE GERMAN* DR. THELEN

A review of grammar, conversation and vocabulary development, writings and discussions based on cultural, social and literary selections. Prerequisite, German 102 or equivalent. Three hours per week plus one hour of language laboratory per week. *Three semester hours.*

035—204. *INTERMEDIATE GERMAN* DR. THELEN

Continuation of German 203. Three hours per week plus one hour of language laboratory per week. *Three semester hours.*

035—305. *SURVEY OF GERMAN LITERATURE:
BEGINNINGS TO 1750* DR. THELEN

Representative literature from the Old High German Period to the Age of Enlightenment. Prerequisite, 204 or equivalent. Three hours per week. *Three semester hours.*

035—306. *SURVEY OF GERMAN LITERATURE:
1750 TO PRESENT* DR. THELEN

Representative literature from the Age of Enlightenment to the modern period. Prerequisite, 204 or equivalent. Three hours per week. *Three semester hours.*

035—312. *SCIENTIFIC GERMAN* STAFF

Reading of classical and contemporary scientific literature. Completion of grammar for intermediate students. German 203-312 fulfills the language requirement for majors in physical and natural sciences. Prerequisite, German 203 or equivalent. Three hours per week. *Three semester hours.*

*035—313. *GERMAN STUDIES IN LITERATURE AND CULTURE* DR. CLOUSER

Readings in a special theme, topic or writer. Previous offerings have included The German fairy tale, the works of Heinrich von Kleist, and German Romanticism. Prerequisite, German 305, 306 or permission of the instructor. Three hours per week. *Three semester hours.*

*035—314. *GERMAN STUDIES IN LITERATURE AND CULTURE* DR. THELEN

German culture and civilization. Such topics as Germany's historical development, political system, educational system, music, folksong, theater, film, folklore, traditional costume and holidays will be discussed. Prerequisite, German 305, 306 or permission of the instructor. Three hours per week. *Three semester hours.*

035—315. *CONVERSATION AND COMPOSITION* DR. CLOUSER

Practice and review in conversation, composition, and grammar. Topics relating to German culture and society will be emphasized. Prerequisite, German 204 or equivalent. Three hours per week. *Three semester hours.*

035—316. *CONVERSATION AND COMPOSITION* DR. THELEN

Continuation of German 315. Three hours per week. *Three semester hours.*

*This course is not offered in 1986-1987.

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- *035—318. *COMMERCIAL AND ECONOMIC GERMAN* STAFF
Introduction to the economic situation, business organization, and commercial practices of Germany. Prerequisite, German 315, 316 or permission of the instructor. Three hours per week. *Three semester hours.*
- 035—319. *CONTEMPORARY GERMAN LITERATURE* DR. THELEN
The 20th-century German short story. Representative short stories from Naturalism to the present with emphasis on the literature since 1945. Prerequisite, German 305, 306 or permission of the instructor. Three hours per week. *Three semester hours.*
- 035—320. *GERMAN NOVELLE* DR. CLOUSER
History and development of the German Novelle from Goethe to the 20th century. Prerequisite, German 305, 306 or permission of the instructor. Three hours per week. *Three semester hours.*
- 035—381. *INTERNSHIP* STAFF
An off-campus academic/work experience under the supervision of an internship advisor and an on-site supervisor. Contact the chairman of the department for further details. Prerequisite, junior standing, nine credits in German, and approval of a faculty internship advisor. Eight to ten hours per week. *Three semester hours.*
- *035—423. *GERMAN MEDIEVAL STUDIES* DR. THELEN
A comprehensive study of the courtly or heroic epic. Reading and analysis of such works as Parzival and the Niebelungenlied, with lectures, discussions and comparison with other versions. Prerequisites, German 305, 306 or permission of the instructor. Three hours per week. *Three semester hours.*
- *035—424. *GERMAN THEATER* DR. CLOUSER
Studies in the masterpieces of the German stage from the Enlightenment to the present. Prerequisite, German 305, 306 or permission of the instructor. Three hours per week. *Three semester hours.*
- 035—425. *GERMAN PROSE* DR. CLOUSER
Readings in the masterworks of German narrative prose. Prerequisite, German 305, 306 or permission of the instructor. Three hours per week. *Three semester hours.*
- 035—426. *GERMAN POETRY* DR. THELEN
Thematic study of poetry from the Middle Ages to the present. Works by such poets as Walther von der Vogelweide, Goethe, Schiller, Morike, Rilke, and Brecht will be analyzed and interpreted. Prerequisite, German 305, 306 or permission of the instructor. Three hours per week. *Three semester hours.*
- 035—428. *ADVANCED GRAMMAR* STAFF
Basic linguistic principles as applied to phonetics, morphology and syntax with special emphasis on the problems related to the teaching of the language. Prerequisite, German 316 or permission of the instructor. Three hours per week. *Three semester hours.*
- 035—451, 452. *ADVANCED SEMINAR IN GERMAN STUDIES* STAFF
Study of topics in German literature and culture. Recent topics have included: the Niebelungenlied; post World War II short story; German Classicism; the works of Goethe and Schiller; Walther von der Vogelweide; poetic realism. Future topics will be determined according to interest and announced in advance. Prerequisite, any 300 or 400 level German literature course above German 305, 306 or permission of the instructor. Three hours per week. *Three semester hours.*

**This course is not offered in 1986-1987.*

COURSES OF INSTRUCTION

035—491. *RESEARCH/INDEPENDENT WORK* STAFF

This course is open to candidates for departmental honors and to other students with the permission of the department chairman. *Three semester hours.*

035—492. *RESEARCH/INDEPENDENT WORK* STAFF

A continuation of course 491. Prerequisite, course 491, and permission of the department chairman. *Three semester hours.*

036—JAPANESE

The Japanese language courses are designed to develop linguistic skills and an understanding of Japanese culture. There is not a major in Japanese language, but it is recommended for students interested in East Asian Studies and international relations.

036—101. *ELEMENTARY JAPANESE*

Introduction to Japanese language and grammar with particular emphasis on comprehension, speaking and enunciation. The Japanese *kana* syllabary and some characters will be introduced. Three hours per week plus one hour of language laboratory per week. *Three semester hours.*

036—102 *ELEMENTARY JAPANESE*

Continuation of Japanese 101. Three hours per week plus one hour of language laboratory per week. *Three semester hours.*

036—201. *ADVANCED ELEMENTARY JAPANESE*

Continuation of Japanese 102. Expansion of vocabulary and aural skills. Introduction to reading, culture and writing. Three hours per week plus one hour of language laboratory per week. *Three semester hours.*

036—202. *ADVANCED ELEMENTARY JAPANESE*

Continuation of Japanese 201. Three hours per week plus one hour of language laboratory per week. *Three semester hours.*

036—203. *INTERMEDIATE JAPANESE*

Development of comprehension, speaking, reading and writing skills. Expansion of *kanji* characters and vocabulary. Discussions will be based on cultural, social and literary texts. Prerequisite: Japanese 202 or equivalent. Three hours per week plus one hour of language laboratory per week. *Three semester hours.*

036—204. *INTERMEDIATE JAPANESE*

Continuation of Japanese 203. Three hours per week plus one hour of language laboratory per week. *Three semester hours.*

036—300. *READINGS IN JAPANESE*

Readings and discussions based on Japanese literary, cultural and social texts. Prerequisite: Japanese 204 or equivalent. Three hours per week. *Three semester hours.*

036—314. *JAPANESE CULTURE AND SOCIETY*

See East Asian Studies.

088—SPANISH

Spanish majors are required to take at least 30 semester hours in Spanish above the 200 level. Majors must select a variety of courses in order to create a balance between language, literature, and civilization in their programs. Spanish 301, 302, at least one 400 level course in Spanish, History 101, 102 are required. Majors must select at least two courses from the following: Anthropology 211, Political Science 100, 242, 252, 344, 355, 357, Fine Arts 311, 312, Music 211 and 212, advanced history, Interdisciplinary Studies 332. It is strongly recommended that all majors study a second language through the intermediate level. Students preparing for graduate study should elect the following courses: English 203, 204, 214, 220, Latin 101, 102, 203, 204 and two 300 level courses in a second language. Students planning to teach are required to take Spanish 428 and a second language through the intermediate level. In the senior year, majors must pass a comprehensive examination.

088—101. *ELEMENTARY SPANISH* STAFF

An introduction to Spanish language and grammar with particular emphasis on comprehension, speaking, reading, and writing. Three hours per week plus one hour of language laboratory per week. *Three semester hours.*

088—102. *ELEMENTARY SPANISH* STAFF

Continuation of Spanish 101. Three hours per week plus one hour of language laboratory. *Three semester hours.*

088—110. *ELEMENTARY SPANISH IN REVIEW* STAFF

A review of elementary Spanish with particular emphasis on comprehension, speaking, reading and writing. This course is designed for students with some background in Spanish and prepares them for Spanish 203. Three hours per week plus one hour of language laboratory per week. *Three semester hours.*

NOTE: A student may not receive credit for Spanish 101 or 102 and Spanish 110.

088—203. *INTERMEDIATE SPANISH* STAFF

A review of grammar, conversation and vocabulary development, writings and discussions based on cultural, social and literary selections. Prerequisite, Spanish 102 or equivalent. Three hours per week plus one hour of language laboratory per week. *Three semester hours.*

088—204. *INTERMEDIATE SPANISH* STAFF

Continuation of Spanish 203. Three hours per week plus one hour of language laboratory per week. *Three semester hours.*

088—208. *SPANISH FOR THE HEALTH PROFESSIONS* DR. ESPADAS

Continuation of Spanish 203. This course is designed for students interested in medicine and related health services. Grammar review, vocabulary development, conversation and readings. Prerequisite, Spanish 203 or permission of the instructor. This course may be used toward fulfillment of the language requirement. Three hours per week plus one hour of language laboratory. *Three semester hours.*

088—305. *INTRODUCTION TO SPANISH LITERATURE* DR. EATON

Study of major literary works and genres of Spain from the Middle Ages through the 20th century with special attention given to the literature of the Golden Age, the Generation of 1898, and the post-Civil War period. Prerequisite, Spanish 204 or equivalent. Three hours per week. *Three semester hours.*

088—306. *INTRODUCTION TO LATIN AMERICAN LITERATURE*

DR. EATON

Study of major trends in Latin American literature from the Colonial period through the 20th century with emphasis on Latin America's progress toward artistic and literary independence from European models. Prerequisite: Spanish 204 or equivalent. Three hours per week. *Three semester hours.*

088—313. *SPANISH CIVILIZATION AND CULTURE*

DR. ESPADAS

A study of Spain from pre-Roman to the present times. Spain's contribution to Western Civilization and its role in world affairs will be explored through its art, literature and thinkers. Prerequisite, Spanish 204 or equivalent. Three hours per week. *Three semester hours.*

088—314. *LATIN AMERICAN CIVILIZATION AND CULTURE*

DR. ESPADAS

A study of Latin America from pre-Columbian to the present times. Latin America's contribution to world civilization and its role in world affairs will be explored through its art, literature and thinkers. Prerequisite, Spanish 204 or equivalent. Three hours per week. *Three semester hours.*

088—315. *CONVERSATION AND COMPOSITION*

DR. EATON

Practice in oral elements of the language, written composition, and grammar. Topics relating to Hispanic culture and society will be emphasized. Prerequisite, Spanish 204 or equivalent. Three hours per week. *Three semester hours.*

088—316. *CONVERSATION AND COMPOSITION*

DR. EATON

Continuation of Spanish 315. Three hours per week. *Three semester hours.*

088—318. *COMMERCIAL AND ECONOMIC SPANISH*

DR. SOUFAS

Introduction to the economic situation, business organization and commercial practices of the Hispanic world. Prerequisite, Spanish 315, 316 or permission of the instructor. Three hours per week. *Three semester hours.*

*088—325. *ADVANCED CONVERSATION*

DR. ESPADAS

This course is designed for the perfection of conversational skills through discussion on a wide range of topics related to Hispanic life and contemporary society as presented in newspapers and magazine articles. Prerequisite, Spanish 315, 316 or permission of the instructor. Three hours per week. *Three semester hours.*

*088—326. *ADVANCED COMPOSITION*

DR. ESPADAS

This course is designed for the development of advanced critical writing skills in Spanish through class discussion and composition assignments based on contemporary Spanish and Latin American writings and issues. Prerequisite, Spanish 315, 316 or permission of the instructor. Three hours per week. *Three semester hours.*

029—332. *LATIN AMERICAN STUDIES*

STAFF

See under Interdivisional Studies.

088—381. *INTERNSHIP*

STAFF

An off-campus academic/work experience under the supervision of an internship advisor and an on-site supervisor. Contact the chairman of the department for further details. Prerequisite, junior standing, nine credits in Spanish, and approval of a faculty internship advisor. Eight to ten hours per week. *Three semester hours.*

088—409. *CONTEMPORARY HISPANIC NOVEL*

STAFF

Study of the 20th century Spanish and Latin American novel. Prerequisite, Spanish 301, 302. Three hours per week. *Three semester hours.*

**This course is not offered in 1986-1987.*

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*088—410. *LITERATURE OF THE GOLDEN AGE* DR. SOUFAS
Study of representative writers of 16th and 17th century Spain. Prerequisite, Spanish 301, 302 or permission of the instructor. Three hours per week. *Three semester hours.*

*088—411. *CERVANTES* DR. ESPADAS
Study of Cervantes, prose with an emphasis on the *Novelas ejemplares* and *Don Quixote*. Prerequisite, Spanish 301, 302 or permission of the instructor. Three hours per week. *Three semester hours.*

088—412. *HISPANIC POETRY* DR. SOUFAS
A study of the representative poets of Spain and Latin America. Prerequisite, Spanish 301, 302. Three hours per week. *Three semester hours.*

088—428. *ADVANCED GRAMMAR* DR. ESPADAS
Basic linguistic principles as applied to phonetics, morphology and syntax with special emphasis on the problems related to the teaching of the language. Prerequisite, Spanish 316 or permission of the instructor. Three hours per week. *Three semester hours.*

088—451, 452, 453. *ADVANCED SEMINAR IN HISPANIC STUDIES* STAFF
Study of topics in Hispanic literature and culture. Recent topics have included: the picaresque in Hispanic literature; the literature of the Spanish Civil War; myth, legend and the fantastic in Latin American Literature. Future topics will be determined according to interest and announced in advance. Prerequisite, Spanish 341, 342 or 343, 344 or permission of the instructor. Three hours per week. *Three semester hours.*

088—491. *RESEARCH/INDEPENDENT WORK* STAFF
This course is open to candidates for departmental honors and to other students with the permission of the department chairman. Prerequisite, a minimum of six semester hours of 300 or 400 level courses and the permission of the department chairman. *Three semester hours.*

088—492. *RESEARCH/INDEPENDENT WORK* STAFF
A continuation of course 491. Prerequisite, course 491 and permission of the department chairman. *Three semester hours.*

MUSIC

See Fine Arts

058—PENNSYLVANIA GERMAN STUDIES

Professors PARSONS (Chairman), SNYDER

The purpose of Pennsylvania German studies is to examine the origins and values of the Pennsylvania Germans (or Pennsylvania Dutch), their history, customs, arts and folklore. The program aims to increase awareness of cultural aspects of the Pennsylvania Germans; to foster appreciation of their folk culture in comparison with the *Volkskunst* or folklife studies of other peoples; and to preserve the dialect and other folk remains. Facilities of Myrin Library, the Pennsylvania German studies archives and southeastern Pennsylvania offer special opportunities for study and research. Selections from these courses are offered during the summer session. Particulars may be found in the Summer School catalog.

A minor in Pennsylvania German studies consists of Pennsylvania German Studies 201, 202 and 12 additional credits.

**This course is not offered in 1986-1987.*

COURSES OF INSTRUCTION

- *058—201. *PENNSYLVANIA GERMAN CULTURE* DR. PARSONS
 A study of the history, language and culture of the Pennsylvania Germans, their influence on American life and contributions to the American scene in 17th & 18th centuries. Readings, lectures, discussion and folk performances on campus. Three hours per week. *Three semester hours.*
- *058—202. *PENNSYLVANIA GERMAN CULTURE* DR. PARSONS
 Study of the history, language and culture of the Pennsylvania Germans in 19th & 20th century America, the diaspora, and status of women among the Pennsylvania Germans. Three hours per week. *Three semester hours.*
- 058—305. *PENNSYLVANIA GERMAN MUSIC* DR. PARSONS
 Folk songs of German origin and from Pennsylvania. Formal music by composers of Pennsylvania German origin. Three hours per week. *Three semester hours.*
- *058—306. *PENNSYLVANIA GERMAN ART* DR. PARSONS
 Pattern, symbolism and content in Folk Art. Formal painters of Pennsylvania German origin. Three hours per week. *Three semester hours.*
- **058—307. *PENNSYLVANIA GERMAN FOLKLIFE* DR. PARSONS
 Classroom study and field techniques related to the folklore, folklife, and folk culture of the Pennsylvania Dutch country. Three hours per week and field trips. *Three semester hours.*
- *058—308. *PENNSYLVANIA GERMAN CRAFTS* DR. PARSONS
 History and theory of eighteenth century occupational and domestic crafts of the Pennsylvania Germans. Three hours per week. *Three semester hours.*
- 058—310. *THE PENNSYLVANIA GERMANS AND RELIGION* DR. PARSONS
 An examination of the varieties of religious denominations and institutions of these persons, attitudes toward religion, as well as the transition to 20th century religious forms. Three hours per week. *Three semester hours.*
- *058—311. *PENNSYLFARNISCH DEITSCH: THE DIALECT* DR. SNYDER
 A study of the dialect language of the Pennsylvania Germans. Basics of the oral language and its written variations. Three hours per day. *Three semester hours.* Summer only.
- *058—312. *PENNSYLFARNISCH DEITSCH: THE DIALECT* DR. SNYDER
 Continuation of Course 311. Three hours per day. *Three semester hours.* Summer only. *Course 311, 312 is offered in Summer School 1982.*
- *058—313. *PENNSYLVANIA GERMAN PROSE AND POETRY* DR. SNYDER
 Works of 19th and 20th century dialect authors, poets and playwrights. *Iwwersetzting ins Deitsch.* Prerequisite, Course 311, 312, or German 203, 204, or evidence of competence in the dialect. Three hours per day. *Three semester hours.* Summer only.
 Study of *Pennsylfarnisch Deitsch* will not fulfill the College general requirement of language for graduation.

*This course not offered in 1986-87.

**This course offered only in Summer 1986.

**058—421, 422, 423, 424, 425, 426, 427, 428. SEMINARS

DR. PARSONS AND VISITING LECTURERS

Topics on the life, culture, customs and values of the Pennsylvania Germans. Individual topics supervised and directed by professors and specialists. Research and folk culture interviews, panels or workshops. Topics for each summer to be announced by preceding January 31: *One semester hour each.*

060—PHILOSOPHY AND RELIGION

Professor WILLIAMSON (*Chairman*); *Associate Professor* HARDMAN; *Lecturer* YOUNG

The department of philosophy and religion seeks to encourage the student's practical appreciation and facile use of the tools of philosophy, to cultivate his informed awareness and critical appraisal of philosophical perspectives, and to give him opportunity for a scholarly and appreciative study of historic as well as contemporary religious insights. In this manner the department strives to translate into the terms of today's academic interests the traditional roles both disciplines have played in liberal education.

The offerings of the department are open to all students, but will be of special interest to pre-theological students, prospective teachers in the fields of philosophy, religion and ethics, and all of those interested in the general humanities.

Majors must take thirty-six hours of work within the department including Philosophy 101, 102, 105; Religion 201, 202; and Philosophy 403, 404, which are required. Each major is also encouraged to earn a minor in another field of study, or to elect 18 hours of coursework in an area of concentration which will broaden his or her skills and interests, e.g. literature, the classics, the arts, and the social sciences.

A minor concentration in philosophy consists of Philosophy 101, 102, 105 and three of the following: 103, 104, 106, 108, 110, 301, 302, 311, 314.

A minor concentration in religion consists of Philosophy 101, 102, 201, 202, and two of the following: 110, 203, 204, 207, 209, 311, 312.

060—101. *HISTORY OF ANCIENT AND MEDIEVAL PHILOSOPHY*

DR. WILLIAMSON AND STAFF

A survey of the evolution of reflective thought in the Western World from Thales to Descartes. Course 101 is open to all students. Three hours per week. *Three semester hours.*

060—102. *HISTORY OF MODERN PHILOSOPHY*

DR. WILLIAMSON AND STAFF

A survey of developing reflective thought in the Western world, beginning with Descartes and including several representative modern philosophers. Course 102 is open to all students. Three hours per week. *Three semester hours.*

060—103. *GENERAL PROBLEMS OF PHILOSOPHY*

DR. WILLIAMSON

A study designed to orient the student with reference to perennial problems of philosophical inquiry. Intensive use is made of primary sources. (Alternates with Course 109.) Three hours per week. *Three semester hours.*

*060—104. *CONTEMPORARY PHILOSOPHY*

DR. WILLIAMSON

A study of late 19th century and twentieth century philosophers and trends in philosophic thought beginning with Nietzsche and Moore. Intensive use is made of primary sources. (Alternates with Course 108.) Three hours per week. *Three semester hours.*

*This course is not offered in 1986-1987.

**Some seminars offered in Summer 1986.

060—105. *INTRODUCTORY LOGIC* MRS. YOUNG

A study of the guiding principles involved in correct thinking; the function of language; definition; fallacious forms of reasoning as they receive expression in daily life; the nature of deductive argument forms; an introduction to the use of symbols. Three hours per week. *Three semester hours.*

060—106. *ADVANCED LOGIC* MRS. YOUNG

A study of symbolic logic with reference to truth functions, rules of inference, proof of validity, and quantification; inductive argument as a crucial component of inquiry in the natural sciences; a critical analysis of the presuppositions of scientific method. Three hours per week. *Three semester hours.*

060—108. *AESTHETICS* DR. WILLIAMSON

An examination of the canons of beauty and art to supply a background for evaluation of specific works of literature, painting, sculpture, music and architecture. (Alternates with Course 104.) Three hours per week. *Three semester hours.*

*060—109. *ETHICS* DR. WILLIAMSON

A study of the principles of moral judgment, with exposition and criticism of the more important theories concerning the basic distinction between right and wrong conduct; the various problems of theoretical and practical ethics. (Alternates with Course 103.) Three hours per week. *Three semester hours.*

060—110. *PHILOSOPHY OF RELIGION* DR. WILLIAMSON

A philosophical analysis of religious beliefs with particular attention devoted to the validity of religious language and knowledge and the questions of the natures of God and man, of miracles, evil, morality and immortality. Three hours per week. *Three semester hours.*

060—201. *HISTORY AND ANTHROPOLOGY OF RELIGION:
THE WESTERN SETTING* DR. HARDMAN

A systematic examination of the phenomenology of religion, its personal, social, psychological and cultural manifestations in history with special attention to Judaism, Islam and Christianity. Three hours per week. *Three semester hours.*

060—202. *HISTORY AND ANTHROPOLOGY OF RELIGION:
THE EASTERN SETTING* DR. HARDMAN

A systematic examination of the phenomenology of religion, its personal, social, psychological and cultural manifestations in history with special attention to the Oriental religions. Three hours per week. *Three semester hours.*

060—203. *INTRODUCTION TO THE LITERATURE OF THE BIBLE:
OLD TESTAMENT* DR. HARDMAN

Foundations of the Judaeo-Christian tradition in the literature and thought of the Old Testament. Emphasis is placed both on the biblical materials themselves and on the varying methodologies of Old Testament interpretation. Three hours per week. *Three semester hours.*

060—204. *INTRODUCTION TO THE LITERATURE OF THE BIBLE:
NEW TESTAMENT* DR. HARDMAN

A study of the Judaistic background of the New Testament, the life and times of Jesus, the emerging Church, and relevant literature. Three hours per week. *Three semester hours.*

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*060—207. *HISTORY OF THE CHRISTIAN CHURCH* DR. HARDMAN

A study of the development of the Christian church from the apostolic period to modern times, with a view to understanding the nature and extent of its contribution to society. (Alternates with course 209.) Three hours per week. *Three semester hours.*

060—209. *LITERATURE AND RELIGIOUS IDEAS* DR. HARDMAN

An analysis of the significant themes common to works of imaginative literature exploring the interrelation of religion and artistic creativity. Attention will be given to Camus, Eliot, Faulkner, Kazantzakis, Waugh, etc. (Alternates with course 207.) Three hours per week. *Three semester hours.*

*060—301. *EPISTEMOLOGY* STAFF

A critical study of the theories of truth, belief, perception, understanding, and the important concepts involved in the characterization, analysis, and appraisals of classic and contemporary discussions of human knowledge. Three hours per week. *Three semester hours.*

*060—302. *PHILOSOPHY OF SCIENCE* STAFF

An examination of the nature of scientific method and scientific theory, with reference to presuppositions, inference, explanation, prediction, application and verification. Three hours per week. *Three semester hours.*

060—311. *SEMINAR IN RELIGION* DR. WILLIAMSON

The directed study of a given topic in religion as it relates to the vital issues of our time. Prerequisite, departmental permission. Three hours per week. *Three semester hours.*

060—311A *Philosophy and Ethics*

*060—311B *Topic for 1985-1986*

060—312. *SEMINAR IN RELIGION* DR. HARDMAN

The directed study of a given topic in religion as it relates to the vital issues of our time. Prerequisite, departmental permission. Three hours per week. *Three semester hours.*

060—312A *Contemporary Theology*

*060—312B *Topic for 1985-1986*

060—314. *SEMINAR IN BIOMEDICAL ETHICS* DR. WILLIAMSON

An examination of ethical decision-making procedures available to health care professionals who face dilemmas caused by acute medical problems and the technological advances in the delivery of health care. Opportunity is given to apply decision-making processes to the major issues in biomedical ethics. Students present papers exploring a dilemma, its empirical and evaluative elements, and proposing an ethical resolution. Prerequisite, permission of the department. Limited to 20 students. Three hours per week. *Three semester hours.*

060—403. *SENIOR SEMINAR: CURRENT ISSUES AND MOVEMENTS IN PHILOSOPHY* DR WILLIAMSON AND STAFF

A study of contemporary thinkers and schools of thought in philosophy, making use of lectures, discussions, research papers, and the like. Open only to philosophy and religion majors except with departmental permission. Three hours per week. *Three semester hours.*

*This course is not offered in 1986-1987.

060—404. *SENIOR SEMINAR: CURRENT ISSUES AND MOVEMENTS IN RELIGION* DR. WILLIAMSON AND STAFF

A study of contemporary theological and institutional trends in religion, making use of lectures, discussions, research papers, etc. Open only to philosophy and religion majors except with departmental permission. Three hours per week. *Three semester hours.*

060—491. *RESEARCH/INDEPENDENT WORK* STAFF

This course is open to candidates for departmental honors and to other students with the permission of the department chairman. *Three semester hours.*

060—492. *RESEARCH/INDEPENDENT WORK* STAFF

A continuation of course 491. Prerequisite, course 491. *Three semester hours.*

065—PHYSICS

Professor SNYDER (Chairman); Associate Professor TAKATS; Assistant Professor NAGY; Lecturers BLOOM, RONNING.

The courses in physics are designed to give the student an understanding of the logic and structure of physics. Methods of analysis and presentation of concepts and ideas are emphasized. Laboratory work demonstrates the dependence of physical theory on experimentation.

Students majoring in physics must take the following courses: Chemistry 111, 112; Math 111, 112, 211, 212; Physics 111, 112, 203, 203a, 204, 207, 208, 207a, 208a, 315, 316, and at least six additional hours of credit in physics at the 200, 300, or 400 level. These courses comprise the Tier II Core Specialization in physics.

Students anticipating graduate study in physics should also take Math 235, 311, 312 and Physics 309, 310, 401, 404. These courses plus the core specialization comprise the Tier II advanced specialization in physics.

Students majoring in physics who are preparing to teach in secondary schools must take Chemistry 111, 112; Math 111, 112, 211, 212; Physics 103, 104, 111, 112, 203, 203a, 204, 207, 208.

A minor concentration in physics consist of Physics 111, 112, 204 and a minimum of nine credits at the 200, 300 or 400 level.

A minor concentration in astrophysics consists of Physics 111, 112, 204, 301, 302, and a minimum of three credits of seminar from the following topics: planetary science, cosmology, celestial mechanics, observational techniques.

Students in the pre-engineering program take Chemistry 111, 112; Math 111, 112, 211, 212, 271; Physics 111, 112, 204, 207, 208. Additional courses in chemistry, mathematics, and physics are chosen in consultation with the pre-engineering advisor. The courses are determined by the particular field of engineering the student plans to enter.

*065—101. *INTRODUCTION TO PHYSICS* STAFF

A survey of classical physics with emphasis on the structure and intellectual development of physics as well as its application to everyday life. Concepts of motion, force, and energy. Prerequisite, knowledge of trigonometry. Two hours lecture and two hours laboratory per week. *Three semester hours.*

*This course is not offered in 1986-1987.

URSINUS COLLEGE CATALOG

- *065—102. *INTRODUCTION TO PHYSICS* STAFF
Continuation of Physics 101, following the development of physics to the 20th century. Concepts of waves, light, electromagnetism, atomic and nuclear physics. Prerequisite, 065—101. Two hours lecture and two hours laboratory per week. *Three semester hours.*
A student may receive credit for only one of the two general physics sequences: Physics 101, 102, or Physics 111, 112.
- 065—103. *INTRODUCTION TO ASTRONOMY* DR. NAGY
A survey emphasizing the methods and discoveries of modern astronomy. Historical astronomy, motions of the earth, observational astronomy, stars. Prerequisite, ability to perform basic algebraic operations. Two hours lecture and two hours laboratory per week. *Three semester hours.*
- 065—104. *INTRODUCTION TO ASTRONOMY* DR. NAGY
Continuation of Physics 103. Stellar evolution, galaxies, cosmology, the origin and evolution of the solar system. Prerequisite, 065—103. Two hours lecture and two hours laboratory per week. *Three semester hours.*
- 065—111. *GENERAL PHYSICS* STAFF
A study of elementary mechanics and thermodynamics, utilizing the principles of calculus in the presentation and in exercises. Math 111 must either be previously completed or studied concurrently. Three hours of lecture, and three hours of laboratory per week. *Four semester hours.*
- 065—112. *GENERAL PHYSICS* STAFF
A continuation of Physics 111. A study of waves, sound, electricity, magnetism, and light. Prerequisite, Physics 111. Math 112 must either be previously completed or studied concurrently. Three hours of lecture, and three hours of laboratory per week. *Four semester hours.*
- 065—203. *MECHANICS I* DR. SNYDER
Vectors, statics, vector calculus, kinematics of a particle, dynamics of a particle, energy, harmonic motion, moving reference systems, central forces. Prerequisites, Physics 111, 112; Math 111, 112. Three hours per week. *Three semester hours.*
- 065—203a. *LABORATORY IN MECHANICS I* DR. SNYDER
Laboratory work (optional) for Course 203. Three hours per week. *One semester hour.*
- 065—204. *ELECTRICITY AND MAGNETISM I* DR. TAKATS
Electrical forces, electric fields and potentials, capacitance, conductors, D-C circuits, magnetic fields, inductance, A-C circuits, electric and magnetic fields in matter. Prerequisites, Physics 111, 112; Mathematics 111, 112. Three hours lecture and three hours laboratory per week. *Four semester hours.*
- *065—205. *WAVES* DR. NAGY
Introduction to the general phenomena of wave motion. Oscillations, traveling waves, modulation, polarization, interference, diffraction, geometric optics. Prerequisite, Physics 111, 112. Three hours lecture and three hours laboratory per week. *Four semester hours.*

*This course is not offered in 1986-1987.

- 065—207. *MODERN PHYSICS* DR. TAKATS
Classical waves and particles, wave-particle duality, elementary theory of the hydrogen atom, atomic spectra, and electron distribution. Prerequisites, Physics 111, 112, Mathematics 111, 112. Three hours per week. *Three semester hours.*
- 065—207a. *LABORATORY IN MODERN PHYSICS* DR. SNYDER
Laboratory work (optional) for Course 207. Three hours per week. *One semester hour.*
- 065—208. *MODERN PHYSICS* DR. TAKATS
A combination of Course 207. Special relativity, elementary particle physics, nuclear physics. Prerequisite, Physics 207. Three hours per week. *Three semester hours.*
- 065—208a. *LABORATORY IN MODERN PHYSICS* DR. SNYDER
Laboratory work (optional) for Course 208. Three hours per week. *One semester hour.*
- *065—301. *INTRODUCTION TO ASTROPHYSICS* DR. NAGY
The celestial sphere, celestial mechanics, the motions of the earth, the solar system, the Earth-Moon system, the Sun, stellar distances and magnitudes, binary stars, spectral classification, and the Hertzsprung-Russel diagram. Prerequisites, Physics 111, 112. Three hours per week. *Three semester hours.*
- *065—302. *INTRODUCTION TO ASTROPHYSICS* DR. NAGY
The Milky Way Galaxy, stellar motions, the structure and evolution of stars, variable and unusual stars, the interstellar medium, extragalactic objects, cosmology. Prerequisite, Physics 301. Three hours per week. *Three semester hours.*
- *065—309. *ELECTRICITY AND MAGNETISM II* DR. TAKATS
Electric and magnetic fields and potentials, LaPlace's equation, dielectrics and magnetic materials, Maxwell's equations, electromagnetic waves. Prerequisites, Physics 204; Mathematics 211, 212. (Alternates with 401.) Three hours per week. *Three semester hours.*
- *065—310. *MECHANICS II* DR. SNYDER
Dynamics of a system of particles, mechanics of rigid bodies, general motion of a rigid body, Lagrange's equations, Hamilton's equations, theory of vibrations. Prerequisites, Physics 203, Mathematics 211, 212. Three hours per week. *Three semester hours.* (Alternates with 404.)
- *065—314. *ALTERNATING CURRENTS* DR. SNYDER
Capacitive and self-inductive circuits; mutual induction; the alternating-current circuit; alternating-current power and power factor; divided circuits; application of complex numbers; electromagnetic waves. Prerequisites, Physics 204 and Mathematics 211. Three hours per week. *Three semester hours.*
- 065—315. *ELEMENTS OF MATHEMATICAL PHYSICS* DR. SNYDER
Introduction to selected concepts and techniques of theoretical physics. Complex numbers, matrices, eigenvalues, vector algebra, vector calculus, Fourier series, calculus of variations, gamma, beta and error functions. Prerequisites, Mathematics 211, 212; Physics 111, 112. Three hours per week. *Three semester hours.*
- 065—316. *ELEMENTS OF MATHEMATICAL PHYSICS* DR. SNYDER
Continuation of Physics 315. Coordinate transformations tensors, series solutions of differential equations, Legendre polynomials, Bessel functions, orthogonal functions, integral transforms, partial differential equations. Prerequisite, Physics 315. Three hours per week. *Three semester hours.*

*This course is not offered in 1986-1987.

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- 065—317. *SEMINAR* STAFF
Study and discussion of advanced topics or recent developments in physics. Among topics offered are relativity and astrophysics. Students must consult the chairman of the department before registering for this course. Three hours per week. *Three semester hours.*
- 065—318. *SEMINAR* STAFF
Same description as Physics 317. Three hours per week. *Three semester hours.*
- 065—401. *INTRODUCTORY QUANTUM MECHANICS* DR. TAKATS
Eigenvalues and eigenfunctions; probability density, expectation values, and operators; the Schrodinger equation in one and three dimensions; the hydrogen atom; perturbation theory; identical particles, spin. The course is open to fourth-year chemistry, mathematics, and physics majors and to qualified third-year students having the consent of the instructor. (Alternates with 309.) Three hours per week. *Three semester hours.*
- 065—404. *THERMODYNAMICS* DR. SNYDER
Primarily classical thermodynamics with a brief introduction to statistical aspects. Temperature, laws of thermodynamics, work, heat, energy, entropy, thermodynamic potentials, kinetic theory of dilute gases, equations of state. Prerequisites, Physics 111, 112, Mathematics 211, 212. Three hours per week. *Three semester hours.* (Alternates with 310.)
- 065—411. *RESEARCH* STAFF
Investigations, of experimental or theoretical nature, pursued independently by the student. The preparation of a summarizing report is required. To register for this course a student must have the consent of a member of the physics staff to serve as his adviser. *One semester hour.*
- 065—412. *RESEARCH* STAFF
Continuation of Course 065—421. *One semester hour.*
- 065—421. *RESEARCH* STAFF
Same as Course 065—411, but more extensive in scope. *Two semester hours.*
- 065—422. *RESEARCH* STAFF
Continuation of Course 065—421. *Two semester hours.*
- 065—491. *RESEARCH/INDEPENDENT WORK* STAFF
This course is open to candidates for departmental honors and to other students with the permission of the department chairman. *Three semester hours.*
- 065—492. *RESEARCH/INDEPENDENT WORK* STAFF
A continuation of Course 491. Prerequisite, Course 491. *Three semester hours.*

070—POLITICAL SCIENCE

Professors BERRY (*Chairman*), ZUCKER; Associate Professor MATTHEWS; Assistant Professors FITZPATRICK, KANE; Instructor MCQUAID.

The general objectives of the political science department are:

- (1) To help students attain knowledge of the theory and practice of politics.
- (2) To help students develop the faculties of expression and critical thinking.
- (3) To challenge students to evaluate their conceptions of the good life for the individual and for society.

The professional objectives are:

- (1) To prepare students for graduate work in political science, law, and public service.
- (2) To prepare students for examinations required for governmental service.
- (3) To prepare students to be political leaders.

A. Major

A major in political science requires Political Science 100, 200 (to be completed by the end of the sophomore year), 218, 237, 242, 252, plus four additional courses for a total of thirty semester hours. In addition, History 101, 102, and six semester hours in other history; Math 241; and six semester hours in another social science are required for the major.

B. Minor

A minor in political science consists of Political Science 100; two courses from among Political Science 218, 237, 242, 252; and three courses at the 300 level for a total of eighteen semester hours.

070—100. *POLITICS AND GOVERNMENT* DR. BERRY, DR. FITZPATRICK
MS. MCQUAID

Great works in political behavior, comparative institutions, methodology, international politics, and political theory create the framework for explaining politics and conducting basic research. Three hours per week. *Three semester hours.*

070—200 *RESEARCH METHODS* MS. MCQUAID

Designed to acquaint the student with the concepts, theories, and research methods of political science as a social science discipline. Prerequisite, Political Science 100. (This course should be completed by all political science majors by the end of their sophomore year.) Three hours per week. *Three semester hours.*

070—218. *AMERICAN GOVERNMENT* DR. ZUCKER, DR. FITZPATRICK

The politics of the U.S. today. An analysis of the structure and functions of the national government: the Constitution, pressure groups, parties and elections, the presidency and bureaucracy, Congress and the Federal judiciary. Prerequisite, Political Science 100. Three hours per week. *Three semester hours.*

070—237. *WESTERN POLITICAL PHILOSOPHY* DR. ZUCKER

Analysis of fundamental problems in Western political thought based on a survey of the writings of the leading political thinkers of Western Civilization from Plato to the present, including Aristotle, Cicero, Thomas Aquinas, Machiavelli, Calvin, Hobbes, Locke, Rousseau, Burke, Mill and Marx. Prerequisite, Political Science 100. Three hours per week. *Three semester hours.*

070—242. *COMPARATIVE POLITICS* MS. MCQUAID

The structures and functions of governments and political groups will be compared to develop basic theory. Representative Western, Third World, and Communist systems will be studied. Prerequisite, Political Science 100. Three hours per week. *Three semester hours.*

070—252. *INTERNATIONAL POLITICS* DR. BERRY

General theory, simulations, games, and case studies explain the relation between states and the roles of politics, individuals, and international law and organizations in the making and resolving of conflict. Prerequisite, Political Science 100. Three hours per week. *Three semester hours.*

070—310. *CONGRESS AND THE PRESIDENCY* DR. FITZPATRICK

The decision-making process in Congress and the executive branch with emphasis on the interaction of the branches in their struggle to make and apply policy. Prerequisite, Political Science 218. Three hours per week. *Three semester hours.*

070—321. *CONSTITUTIONAL INTERPRETATION I* DR. FITZPATRICK

The role of the Supreme Court in the interpretation and enforcement of the Constitution is examined through analysis of leading cases. Judicial review, powers of Congress and the President, and the division of powers between the national and state governments are among the topics considered. Prerequisite, Political Science 218. Three hours per week. *Three semester hours.*

070—322. *CONSTITUTIONAL INTERPRETATION II* DR. FITZPATRICK

The role of the Supreme Court in the interpretation and enforcement of individual rights within a system of limited government. Substantive and procedural due process, freedom of expression and conscience, and equal protection of the law are among the topics considered. Prerequisite, Political Science 218. Three hours per week. *Three semester hours.*

070—323. *AMERICAN LOCAL GOVERNMENT* STAFF

The structure, policies, politics, and problems of local government institutions in the American federal system. Intergovernmental relations, citizen participation policy development, leadership, and service performance are all considered. Prerequisite, Political Science 218. Three hours per week. *Three semester hours.*

070—324. *POLITICAL PARTIES AND ELECTIONS* DR. FITZPATRICK

An examination of the evolution of the American two-party system and the increasingly volatile nature of the American electorate. Topics include the dynamics of party realignment, the changing characteristics of the American voter, the politics of presidential selection, and the consequences of party and electoral reform. Prerequisite, Political Science 218. Three hours per week. *Three semester hours.*

070—325. *THE JUDICIAL PROCESS* DR. FITZPATRICK

Proceeding from the idea that the judicial process is essentially a political process, this course will examine the ways in which participants in the judicial process—particularly judges—reach decisions, engage in politics, and affect public policy. Prerequisite, Political Science 218. Three hours per week. *Three semester hours.* (Offered alternate years)

*070—326. *JUDICIAL REVIEW AND DEMOCRACY* DR. FITZPATRICK

The nature, scope, and problems of judicial review will be examined by analyzing the role of the judiciary in our democratic system of government. Emphasis will be on the thin line between neutral judgement and prescriptive policymaking. Prerequisite, Political Science 218. Three hours per week. *Three semester hours.* (Offered alternate years)

070—327. *SEMINAR IN AMERICAN GOVERNMENT* DR. ZUCKER

Preparation and discussion of research papers in American politics on subjects decided upon by participants. Prerequisite, Political Science 218. Three hours per week. *Three semester hours.*

070—328. *LAW AND SOCIETY* DR. KANE

A study of the origins, objectives, and manifestations of law in the United States political system. The case method of analysis is used to identify the salient features of the major classes of law and to evaluate the judicial procedures and institutions by which law is applied in the United States. Prerequisite, Political Science 218. Three hours per week. *Three semester hours.*

*Not offered in 1986-87.

070—329. *PUBLIC ADMINISTRATION* DR. KANE

A survey of the field of public administration, emphasizing administrative organization, fiscal management and personnel management. The administrative process is considered as a unit encompassing federal, state and local administration. Prerequisite, Political Science 218. Three hours per week. *Three semester hours.*

070—330. *AMERICAN POLITICAL THOUGHT* DR. ZUCKER

An exploration of the origins and growth of American political values and institutions from the 17th century to the present based on the writings of prominent American political practitioners. Prerequisite, Political Science 237. Three hours per week. *Three semester hours.*

070—338. *MODERN POLITICAL THOUGHT* DR. ZUCKER

Extensive consideration of basic 20th century political questions: liberty, democracy, totalitarianism, collectivism, personal autonomy, political obligation; based on the writings of leading modern authors. Prerequisite, Political Science 237. Three hours per week. *Three semester hours.*

070—344. *POLITICAL DEVELOPMENT* MS. MCQUAID

A study of political change in selected political systems and their efforts to develop institutions and policies to manage the problems of national integration, economic development, cultural unity, and national independence. Prerequisite, Political Science 242. Three hours per week. *Three semester hours.*

070—346. *JAPANESE POLITICS* MS. MCQUAID

Focus on 20th Century Japanese politics. The major issues, events, institutions and trends of the modern Japanese political experience. Prerequisite, Political Science 242. Three hours per week. *Three semester hours.*

070—347. *CHINESE POLITICS* MS. MCQUAID

Focus on the government and politics of 20th Century China. Will examine issues, events, personalities and policy trends of the modern Chinese political experience. Prerequisite, Political Science 242. Three hours per week. *Three semester hours.*

070—354. *WORLD LEADERS* DR. BERRY

The role of individuals in world politics will be analyzed through the study of biographies and autobiographies. Special attention will be directed to the philosophies and operational codes of major world leaders. Prerequisite, Political Science 252. Three hours per week. *Three semester hours.*

070—355. *U.S. FOREIGN POLICY* DR. BERRY

Works of scholars and statesmen analyze the process and substance of recent foreign policy. Attention is paid to the capabilities of presidents, the influence of Congress and public opinion, and the organization and function of the National Security Council. Prerequisite, Political Science 252. Three hours per week. *Three semester hours.*

070—357. *WAR AND REVOLUTION* DR. BERRY

Various theories of international conflict will be tested by way of a series of case studies on 20th Century wars and revolutions. The Inter-Nation Simulation will be played using a historical or hypothetical conflict to further test theories. Prerequisite, Political Science 252. Three hours per week. *Three semester hours.*

070—381. *INTERNSHIP IN POLITICS AND GOVERNMENT* STAFF

Internship in a public or governmental organization or participation in an overseas study program. An 81.67 grade average and permission of the department are required. *Three semester hours.*

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070—420. *TOPICS IN LAW AND POLITICS* STAFF
An occasional course dealing with special subject areas or events. *Three semester hours.*

070—440. *INTERDISCIPLINARY SEMINAR IN AMERICAN PUBLIC POLICY* STAFF
Selected topics in American public policy. Preparation and discussion of research papers. Open to fourth-year students majoring in American public policy. (The same course as 440 under economics and business administration.) Three hours per week. *Three semester hours.*

070—491. *RESEARCH/INDEPENDENT WORK* STAFF
This course is open to candidates for departmental honors and to other students with the permission of the department chairman. *Three semester hours.*

070—492. *RESEARCH/INDEPENDENT WORK* STAFF
A continuation of course 491. Prerequisite, course 491. *Three semester hours.*

075—PSYCHOLOGY

Professor FAGO, (Chairman); Associate Professor CHAMBLISS; Assistant Professor RIDEOUT.

The objectives of the department of psychology for the student are:

1. To familiarize the student with the general methods of behavioral research.
2. To familiarize the student with the various content areas of psychology.
3. To develop an appreciation of the interplay of theory and research in psychology.
4. To develop the ability for critical, analytic and independent thinking in the realm of behavioral science.

A student meeting these objectives is prepared not only for graduate work in psychology and the other behavioral sciences, but also for study in other areas and professions as well as employment in a wide variety of industrial, business, and governmental positions. Also attainable is Pennsylvania certification for secondary school teaching in social science with an emphasis in psychology.

In order to meet these objectives, the psychology curriculum is divided into four components: major core, ancillary courses, major concentration, minors. These are explained individually below.

A. Major Core

This is required of all Psychology majors. It consists of a basic set of courses required of all majors, and four content areas from each of which the student must select one course.

1. Required: psychology 101, 102, 111, 112, 210.
2. Content areas: each student must select one course from each content area.
 - a. Experimental: Psychology 335, 336, 351, 352
 - b. Developmental/Personality: Psychology 334, 417, 437, 438
 - c. Social/Applied: Psychology 246, 315, 409, 440
 - d. Research/Theory: Psychology 441, 442, 444, 491, 492

B. Ancillary Courses

Required of all majors

1. Biology 101, 102, or 111, 112
2. Mathematics 171 or 271
3. Mathematics 241
4. Six credit hours in Anthropology or Sociology.

C. Major Concentration

This is not required but rather intended for the student who plans to pursue graduate study in psychology or related fields.

1. Math 242
2. Psychology 441 or 442, 491, or 492 (beyond the course taken as part of the major core).
3. Three electives from departmental offerings at the 300-400 level.

D. Minor Concentrations

A minor concentration in general psychology consists of Psychology 101 and 111, or 102 and 112; 210 or 409; one course in experimental psychology chosen from 335, 336, 351, or 352; one course in developmental/personality psychology chosen from 334, 417, 437 or 438; one course in social/applied psychology chosen from 246, 315, 409, or 440.

A minor concentration in human behavioral development consists of Psychology 101 and 111, or 102 and 112; 223, 334, 417, 437.

A minor concentration in neuroscience consists of Biology 317 and 318; Psychology 335 and 336; and either Psychology 441 or 442 (approved topic applicable to the Neurosciences), or Biology 481 or 482 (approved topic applicable to the Neurosciences), or Biology 442. Psychology 337 is recommended but not required.

075—101. *INTRODUCTORY PSYCHOLOGY* STAFF

A survey of the basic biological and environmental influences on the psychological processes. Emphasis will be on areas such as physiological correlates of behavior, the senses, and learning. Three hours per week. *Three semester hours.*

Psychology majors will take this course in conjunction with Psychology 111.

075—102. *INTRODUCTORY PSYCHOLOGY* STAFF

This course surveys the more complex psychological and environmental determinants of individual behavior. Specific topics include the normal personality, abnormality, social behavior, work, and problems of scientific measurement. Three hours per week. *Three semester hours.*

Psychology majors will take this course in conjunction with Psychology 112.

075—111. *INTRODUCTORY PSYCHOLOGY LABORATORY* STAFF

Designed primarily for psychology majors, the laboratory provides basic experience with the research methods and procedures utilized in the content areas covered in Psychology 101. Prerequisite, major in psychology or permission of the instructor. Two hours per week. *One semester hour.*

075—112. *INTRODUCTORY PSYCHOLOGY LABORATORY* STAFF

Designed primarily for psychology majors, the laboratory provides basic experience with the research methods and procedures of the content areas covered in Psychology 102. Prerequisite, major in psychology or permission of the instructor. Two hours per week. *One semester hour.*

075—108. *MENTAL HEALTH AND ABNORMAL PSYCHOLOGY* DR. CHAMBLISS

The problems of mental health are treated under the following topics: The dynamics of human behavior, normal and abnormal reactions to frustration and conflict. Psychological, organic and social causes of poor mental health. The roles played by the home, the school and society in mental health. Additional topics include psycho-neuroses and functional psychoses, epilepsy, drug addiction and alcoholism. Methods of prevention and treatment of mental illness are discussed. This course is given from the point of view of preventive mental hygiene. Prerequisite, Psychology 101 or 102. Three hours per week. *Three semester hours.*

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075—210. *EXPERIMENTAL PSYCHOLOGY*

DR. RIDEOUT

This course is designed to familiarize the student with principles of experimental design, statistical techniques, and laboratory methods used in psychology. Lectures, demonstrations, data collection, and the preparation of scientific reports. Prerequisites, Psychology 101 or 102, Psychology 111, Math 241, or permission of instructor. Three hours lecture, two hours laboratory per week. *Four semester hours.*

075—223. *EDUCATIONAL PSYCHOLOGY—LEARNING*

STAFF

Contemporary learning theory for teachers. The course takes an information-processing approach to cognition, and includes such topics as concept formation, problem solving, memory, and attention. Educational applications will be stressed. (The same course as 223 under Education.) Prerequisite, Psychology 101 or 102. Three hours per week. *Three semester hours.*

075—224. *EDUCATIONAL PSYCHOLOGY—GROWTH AND DEVELOPMENT*

STAFF

The nature of development of the psychological processes from the prenatal period through adolescence. (The same course as 224 under Education.) Prerequisite, Psychology 101 or 102. Three hours per week. *Three semester hours.*

075—246. *PSYCHOLOGY IN THE COMMUNITY*

DR. CHAMBLISS

Applications of psychological theory, research methods, and empirical findings to community programs dealing with contemporary social problems, such as crime and delinquency, racial prejudice, mental illness, drug addiction, poverty and other forms of deprivation. Prerequisites, Psychology 101 or 102. Three hours per week. *Three semester hours.*

075—311. *HISTORY AND THEORIES OF PSYCHOLOGY*

DR. FAGO

A study of the more important findings and theories contributing to the development of modern scientific psychology. Prerequisite, Psychology 101 or 102. Three hours per week. *Three semester hours.*

075—315. *PSYCHOLOGY IN INDUSTRY*

STAFF

Applications of psychology to industry: employee and job ratings, aptitudes and skills, work methods, training programs, fatigue, safety, attitudes, morale, interviewing and counseling. Human relations problems are emphasized using the case method and role playing. (Alternates with 417.) Prerequisites, Psychology 101 or 102; Mathematics 241. Three hours per week. *Three semester hours.*

075—334. *DEVELOPMENTAL PSYCHOLOGY*

DR. FAGO

The concepts, theories and experimental approaches used to account for the ontogeny of behavior will be reviewed. The primary emphasis will be on human development. Prerequisites, Psychology 101 or 102. Three hours per week. *Three semester hours.*

075—335. *BEHAVIORAL NEUROSCIENCES*

DR. RIDEOUT

A study of the structure and function of the vertebrate nervous system, particularly of the neural substrates of behavior. Topics include evolutionary, anatomical and physiological approaches to the nervous system and behavior. Some emphasis will be placed on topics in sleep research and in cerebral lateralization of function. May be taken in conjunction with Psychology 337. Prerequisites, Psychology 101 or 102; Biology 101 or 111; or by permission of the instructor. Three hours per week. *Three semester hours.*

COURSES OF INSTRUCTION

075—336. *SENSATION AND PERCEPTION* DR. RIDEOUT

The nature of the fundamental sensory processes will be explored with emphasis on vision and audition. Theory and experiments bearing on significant perceptual phenomena will be surveyed from both physiological and behavioral viewpoints. Prerequisites, Psychology 101 or 102, Psychology 210. Three hours of lecture, two hours of laboratory per week. *Four semester hours.*

075—337. *NEUROSCIENCES LABORATORY* DR. RIDEOUT

A study of nervous system structure and function using the basic anatomical, physiological, and behavioral methods of the neurosciences. Topics include gross and microscopic neuroanatomy, electrophysiological recording, techniques of stereotaxic surgery, and experimental interventions in the central nervous system. Cor-equisites, Psychology 335 and permission of the instructor. Two hours per week. *One semester hour.*

075—341. *READINGS IN PSYCHOLOGY* STAFF

Individual study of one or more selected topics in the psychological literature, and preparation of an annotated bibliography or a detailed proposal for subsequent research. To register for this course, the student must have the consent of a member of the psychology staff to serve as adviser. *One semester hour.*

075—342. *READINGS IN PSYCHOLOGY* STAFF

Content and prerequisites as in Psychology 341, but offered in the spring term. *One semester hour.*

075—351. *LEARNING AND MOTIVATION* DR. FAGO

A review of learning theory, past and contemporary. Emphasis will be on the basic processes of classical conditioning and instrumental learning, the phenomena associated with these processes, and the development of learning theory in response to experimentation. Lectures, individual experimentation and the preparation of scientific reports. Prerequisites, Psychology 101 or 102, and 210. Three hours lecture, two hours laboratory per week. *Four semester hours.*

075—352. *COGNITIVE PSYCHOLOGY* DR. FAGO

A review of contemporary research and theory dealing with human mental processes. Topics covered include attention, pattern recognition, structure of memory, memory processes, and language acquisition. Prerequisites, Psychology 101 or 102, and 210. Three hours lecture, two hours laboratory per week. *Four semester hours.*

075—381. *PSYCHOLOGY INTERNSHIP* DR. CHAMBLISS

An off-campus academic/work experience under the supervision of an internship advisor and an on-site supervisor. Contact Dr. Chambliss for further information. Prerequisite, junior standing, nine credits in Psychology, and approval of a faculty internship advisor. Eight to ten hours per week. *Three semester hours.*

075—409. *EDUCATIONAL AND PSYCHOLOGICAL TESTS AND MEASUREMENTS* STAFF

An introductory survey of the field of measurement in psychology and education; main features of the techniques of testing and test construction; types of tests and scales; evaluation; interpretation; use. Prerequisites, Psychology 101 or 102; Mathematics 241. Two hours of lecture, two hours of laboratory per week. *Three semester hours.* (The same course as 409 under Education.)

*075—417. *DEVELOPMENTAL DEVIATIONS* STAFF

The effects on personality, social, and intellectual development of minimal brain dysfunction, learning disabilities, retardation, sensorimotor handicaps, and giftedness. Etiology, assessment, and remedial methods. Demonstrations and field trips. Prerequisites, Psychology 101 or 102, Psychology 334 or permission of the instructor. (Alternates with 315.) Three hours per week. *Three semester hours.*

075—437. *PERSONALITY* DR. CHAMBLISS

A comprehensive survey of psychological theory and research dealing with the "normal" aspects of human nature. The psychoanalytic, trait, humanistic, and behavioral perspectives will be explored. Includes experiential introduction to computer-assisted analytical techniques. Prerequisites, Psychology 101 or 102, 108, and 224 or 334. Three hours per week. *Three semester hours.*

075—438. *PSYCHOPATHOLOGY AND PSYCHOTHERAPY* DR. CHAMBLISS

Clinical and experimental approaches to the understanding and treatment of psychosis, anxiety disorders, and related conditions. Selected topics are studied intensively to illustrate the wide variety of contemporary viewpoints and techniques. Includes experiential introduction to computer-assisted analytical techniques. Prerequisites, Psychology 101 or 102, 108, and 224 or 334. Three hours per week. *Three semester hours.*

075—440. *SOCIAL PSYCHOLOGY* STAFF

A study of group action and of the group influences by which the individual is surrounded; tradition, custom, public opinion and other psychological and social forces which affect individual judgment and action. Prerequisite, Psychology 101 or 102 and 223 or 351 or 352. Three hours per week. *Three semester hours.*

075—441. *RESEARCH* STAFF

Investigations of an experimental, clinical or theoretical nature pursued independently by the student. The preparation of a scientific report is required. To register for the course a student must have the consent of a member of the psychology staff to serve as his or her adviser. *Three semester hours.*

075—442. *RESEARCH* STAFF

Content and prerequisites as in Psychology 441, but offered in the spring term. Students who have been admitted to the course and who have fulfilled its requirements may be awarded departmental honors, but no additional semester hours of credit, if they have qualified in other ways for admission to the honors program. *Three semester hours.*

075—444. *SEMINAR IN PSYCHOLOGY* STAFF

A seminar intended to familiarize the student with the current trends and special topics in theoretical and applied psychology. Emphasis will be given to the preparation and presentation of papers on selected topics which will vary from year to year. Open to third- and fourth-year students majoring in psychology. Three hours per week. *Three semester hours.*

075—491. *RESEARCH/INDEPENDENT WORK* STAFF

This course is open to candidates for departmental honors and to other students with the permission of the department chairman. *Three semester hours.*

075—492. *RESEARCH/INDEPENDENT WORK* STAFF

A continuation of course 491. Prerequisite, course 491. *Three semester hours.*

*This course is not offered in 1986-1987.

090—SOCIOLOGY

Assistant Professor GALLAGHER (Chairman)

Sociology is interested in the analysis of social life. It is the goal of the department of sociology to assist the student in developing insights into why the analysis of social life is considered to be important, what this approach can offer in terms of understanding people, and how it will help us to understand our own society.

The department of sociology offers courses leading to a minor in sociology. The requirements for the minor are a minimum of 15 semester hours in sociology. The minor must include at least two 200 level courses which may include anthropology 252, and one 400 level course.

090—101. INTRODUCTION TO SOCIOLOGY DR. GALLAGHER

This course is designed to introduce students to sociology as a discipline. It will emphasize the sociological view of human society, considering such issues as social behavior, social interaction, and the influence of groups. Topics to be discussed are society, culture, groups, social stratification, deviance, race relations, the family, education, religion, science, economics, and politics. This course is offered every semester. Three hours per week. *Three semester hours.*

***090—212. DEVIANCE** DR. GALLAGHER

This course will analyze major categories of deviance, such as crimes of violence, property crimes, white collar crime, organized crime, alcohol and drug abuse, and alternative sexual practices. Deviance will be viewed as a product of the society in which it occurs. Questions to be considered are what constitutes deviant behavior in our own and in other societies, what forms of deviance are most likely in our society, and how should deviance be treated in our society. This course is offered in the spring semester of odd numbered years. Prerequisites, Sociology 101. Three hours per week. *Three semester hours.*

***090—222. THE FAMILY** DR. GALLAGHER

A comparative study of the family in various societies provides a background for the analysis of the family in modern America. This course is offered in the spring semester of even numbered years. Prerequisites, Sociology 101. Three hours per week. *Three semester hours.*

***090—231. THE SOCIOLOGY OF RELIGION** DR. GALLAGHER

In this course, religion will be analyzed as a social institution. The role of religion in reinforcing beliefs, in contributing to social stability, and in advocating change will be examined. Examples will be selected from the major religions of the world and the societies with which they have been associated. The course will emphasize the role of religion in American society. This course is offered in the fall semester of odd-numbered years. Prerequisite, Sociology 101. Three hours per week. *Three semester hours.*

090—241 TOPICS IN SOCIOLOGY STAFF

An occasional course which will focus on special topics in sociology. Prerequisites, Sociology 101. Three hours per week. *Three semester hours.*

003—252 AMERICAN ETHNIC GROUPS DR. VAN NESS

See Anthropology.

*This course is not offered in 1986-1987.

URSINUS COLLEGE CATALOG

090—451. RESEARCH

DR. GALLAGHER

This course comprises directed reading and research on a specific sociological topic. Students wishing to register in this course must present to the advisor for this research a proposal outlining the research to be completed. The proposal must be approved by the advisor. At regular intervals during the semester, students must submit progress outlines, and meet with the advisor to discuss them. A final paper will be required. Prerequisites, Sociology 101 and two 200 level sociology courses. *Three semester hours.*

090—461. SEMINAR IN SOCIOLOGY

DR. GALLAGHER

Seminars will deal with special topics in sociology. The topics may be either a concentrated look at a major sub-discipline within sociology (e.g., the sociology of education, social problems, or the changing role of women in American society), or the analysis of various theoretical perspectives. Prerequisites, Sociology 101 and one 200 level sociology course. Three hours per week. *Three semester hours.*

SPANISH

See Modern Languages

SPECIAL OFFERINGS

012—College Scholars' Program

Guided independent study for qualified freshmen in their second term, sophomores and juniors. Each course is credited as three semester hours. (See "The Ursinus Plan" for details.)

012—201. LANGUAGES DR. WICKERSHAM AND DIVISIONAL TUTORS

012—202. LANGUAGES DR. WICKERSHAM AND DIVISIONAL TUTORS

012—203. HUMANITIES DR. DECATUR AND DIVISIONAL TUTORS

012—204. HUMANITIES DR. DECATUR AND DIVISIONAL TUTORS

012—205. SOCIAL SCIENCES DR. GALLAGHER AND DIVISIONAL TUTORS

012—206. SOCIAL SCIENCES DR. GALLAGHER AND DIVISIONAL TUTORS

012—207. NATURAL AND PHYSICAL SCIENCES
MRS. SHINEHOUSE AND DIVISIONAL TUTORS

012—208. NATURAL AND PHYSICAL SCIENCES
MRS. SHINEHOUSE AND DIVISIONAL TUTORS

029—Interdivisional Studies

029—100. NATURAL SCIENCE PERSPECTIVES DR. STAIGER

A survey of scientific thinking from Atoms to the modern views of matter in atomic, astronomic, electronic and biological thinking. Three hours per week. *Three semester hours.*

029—301. WOMEN'S STUDIES INTERDISCIPLINARY COURSE STAFF

An interdisciplinary course to promote an awareness and understanding of men's and women's potential and options in our society. Readings and lectures will explore such topics as women in history, gender and gender roles, women and society, women's place in the working world, in legal and religious institutions. Weekly lectures, case studies, tutorials and independent research. Open to upperclass students. Three hours per week. *Three semester hours.*

COURSES OF INSTRUCTION

029—332. *LATIN AMERICAN STUDIES* STAFF

An interdivisional approach to the study of Latin America. The development of the history, politics, society and literature of Latin American nations will be examined. Readings will be selected from the works of major intellectual figures and writers. Emphasis will be on the 20th century. Weekly lectures, tutorials and independent research topics. Open to upperclass students. Open to Spanish majors, but does not fulfill Spanish language requirements. Three hours per week. *Three semester hours.*

029—350. *HUMAN SEXUALITY* DR. ALLEN, DR. CHAMBLISS

A study of the development and expression of human sexuality through the ages and through the lifespan of the individual. Alternate orientations, variances and sexual dysfunctions, disorders and diseases are also considered. Prerequisites, Biology 101, 102 or 111, 112 and Psychology 101, 102; or permission of the instructor. Three hours of lecture per week. *Three semester hours.*

029—401. *SENIOR SYMPOSIUM* STAFF

The Senior Symposium is an elective course designed to encourage seniors from all departments to apply their accumulated knowledge to some of the major problems of the age. It is hoped that open discussion of current movements, ideas and values will help the students to move with a greater degree of confidence and usefulness in the world after graduation and will result in individual participation and involvement in the issues of their time. The Symposium, therefore, will deal with meanings and values as well as facts. Independent readings and periodic conferences with a tutor, with emphasis on the contemporary world. Open only to seniors. *Three semester hours.*

029—402. *COMMUNITY AND CIVILIZATION* STAFF

An interdisciplinary comparative studies program that examines the interdependence of values and institutions of the modern world. Students will be asked to discover the forces favoring continuity and change in values and institutions in an attempt to find the parameters of future developments. In addition to a weekly lecture, there will be tutorials, independent research and case studies in the form of disputations. Open to third- and fourth-year students. Three hours per week. *Three semester hours.*

030—World Literature

030—201. *WESTERN LITERATURE* STAFF

Critical reading of selected representative works from Western literature. Three hours per week. *Three semester hours.*

030—202. *WESTERN LITERATURE* STAFF

A continuation of World Literature 201. Prerequisite, Course 201. Three hours per week. *Three semester hours.*

030—203. *CHINESE LITERATURE* DR. DeCATUR

Critical reading of selected representative works from Chinese literature in modern translations. Three hours per week. *Three semester hours.*

030—204. *JAPANESE LITERATURE* DR. DeCATUR

Critical reading in Japanese poetry, novels, short stories and essays in modern translations. Three hours per week. *Three semester hours.*

COMBINED MAJORS

072—American Public Policy

Students majoring in American public policy must take the following core requirements: Political Science 100, 218, 321, 325, 327; Economics and Business Administration 101, 102, 325, 326.

Students must choose three of the following courses: Political Science 310, 322, 323, 329, 330, 355, 381 or Economics 435.

All public policy majors are required to take the interdisciplinary seminar in American public policy, Political Science 440, or Economics 440.

052—Applied Mathematics/Economics

Students majoring in applied mathematics/economics must take the following math courses: 111, 112, 211, 235, 241, and 271. They must also take the following economics courses: 101, 102, 325, 326.

All majors must take Math 464, Seminar in Applied Mathematics/Economics, offered jointly by the departments of mathematics and computer science and economics and business administration.

The student must choose at least two advanced courses each from at least two of the following three areas: (A) Math 242, 341, 342, 461. (Note: Math 212 is a prerequisite for 461.) (B) Math 272, 371, 372, 471, 472. (C) Economics 315, 436. (Note: Economics 242 is a prerequisite for 436.)

Economics 101, 102 will not satisfy the Tier I social science requirement. Physics 111, 112, although not required for the major, may be elected to satisfy the Tier I science requirement. Advanced courses shown above that are not chosen to satisfy requirements are recommended as electives.

074—International Relations

Students majoring in international relations must take the following core requirements: History 307, 308, and 315 or 316; Economics and Business Administration 101, 102, 408; Political Science 100, 242, 252; Anthropology 101; and two 300 level courses in a foreign language.

Students must select courses from two of the three following areas: history (*six semester hours*); political science (*six semester hours*); economics (*six semester hours*). Selections in history must be from the following: 224, 316, 322, 326, 334, 342. Selections in political science must be from the following: 344, 346, 347, 354, 355, 357. Selections in economics must be from the following: 328, 434.

036—Japanese Studies

The objective of the Japanese studies program is to provide students with an introduction to Japanese language, literature, politics, religion, and society for the purpose of developing an understanding of contemporary Japan and its role in world affairs and assisting those students with related professional or vocational interests to develop a suitable foundation for more intensive studies of Japanese life and culture. This purpose is to be accomplished both through formal academic instruction and through travel and informal activities which bring students together with Japanese students, scholars, and families.

036—101. ELEMENTARY JAPANESE

STAFF

Introduction to Japanese with particular emphasis on the spoken language. The course requires 12 to 14 hours per week of self-instruction, using tape recorded materials coordinated with the text, and two hours per week of tutorials with a native speaker. This course does not fulfill the language requirement. *Three semester hours.*

COURSES OF INSTRUCTION

036—102. *ELEMENTARY JAPANESE* STAFF

Continuation of Japanese Studies 101. Emphasis is on the spoken language with an introduction to reading and writing. This course does not fulfill the language requirement. Prerequisite, Japanese Studies 101. *Three semester hours.*

036—203. *INTERMEDIATE JAPANESE* STAFF

Continuation of Japanese Studies 102. Emphasis is on the spoken language. Reading and writing skills are developed and cultural materials are introduced. This course does not satisfy the language requirement. Prerequisite, Japanese Studies 102 or equivalent. *Three semester hours.*

036—204. *INTERMEDIATE JAPANESE* STAFF

Continuation of Japanese Studies 203. Emphasis is on the spoken language with further development of writing skills. Readings are taken from cultural and literary selections. This course does not satisfy the language requirement. Prerequisite, Japanese Studies 203. *Three semester hours.*

036—401. *SUMMER STUDY IN JAPAN* STAFF

A five-week course offered in collaboration with Tohoku Gakuin (North Japan University) in Sendai, Japan. This interdisciplinary course comprises three weeks of classroom instruction (in Sendai) in selected topics in Japanese culture and society and elementary conversational Japanese; followed by a two-week guided tour of Japan. The staff includes English-speaking professors of the host university and members of the Ursinus College faculty. Offered annually, mid-May through mid-June. (Not open to first-year students.) *Three semester hours.*

SUGGESTED FIRST-YEAR PROGRAMS

Academic advisers help students decide what courses to take each year to satisfy course requirements within each of the TIERS. Shown below are typical course selections of freshmen in the major programs.

BIOLOGY (B.S.)

First Year (Plan CMB)

TIER I	
English Composition 101, 102.....	6
Language 101, 102 or 203, 204.....	6
Physical Education 110.....	1/2
Physical Education Activities Courses (optional).....	1 1/2
TIER II	
Biology 111, 112.....	8
Chemistry 111, 112.....	8
Math 111, 112.....	6
TIER III	0
TIER IV	0

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First Year (Plan CMP)

TIER I	
English Composition 101, 102.....	6
Language 101, 102 or 203, 204.....	6
Physical Education 110.....	1/2
Physical Education Activities Courses (optional).....	1 1/2
TIER II	
Chemistry 111, 112.....	8
Physics 111, 112.....	8
Math 111, 112.....	6
TIER III	0
TIER IV	0

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CHEMISTRY (B.S.)

TIER I	
English Composition 101, 102.....	6
Language 101, 102 or 203, 204.....	6
Physical Education 110.....	1/2
Physical Education Activities Courses (optional).....	1 1/2
TIER II	
Chemistry 111, 112.....	8
Physics 111, 112.....	8
Math 111, 112.....	6
TIER III	0
TIER IV	0

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CLASSICAL STUDIES (B.A.)

TIER I	
English Composition 101, 102.....	6
History 101, 102.....	6
Physical Education 110.....	1/2
Physical Education Activities Courses.....	1 1/2
TIER II	
Greek 101, 102.....	6
Latin 101, 102 or 203, 204 or 304, 305.....	6
TIER III	0
TIER IV	0
Elective.....	6

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ECONOMICS AND

BUSINESS ADMINISTRATION (B.A.)

TIER I	
English Composition.....	6
Science.....	6
Foreign Language.....	6
Math 101, 102, or 111.....	6
Physical Education 110.....	1/2
Physical Education Activities Courses (optional).....	1 1/2
TIER II	
Economics and Business Administration 101, 102.....	6
TIER III	0
TIER IV	0

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ENGLISH (B.A.)

TIER I	
English Composition 101, 102.....	6
Humanities.....	6
Science.....	6
Foreign Languages.....	6
Social Science.....	6
Physical Education 110.....	1/2
Physical Education Activities Courses (optional).....	1 1/2
TIER II	0
TIER III	0
TIER IV	0

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SUGGESTED PROGRAM

HEALTH, PHYSICAL EDUCATION AND RECREATION (B.S.)

TIER I	
English Composition 101, 102.....	6
History 101, 102	6
Foreign Language	6
Biology 101	3
Chemistry 101, 102 or Physics 101, 102.....	6
TIER II	
Physical Education 131, 132	6
Physical Education Activities	4
TIER III	
	0
TIER IV	
	0
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HISTORY (B.A.)

TIER I	
English Composition 101, 102.....	6
Science or Mathematics.....	6
Foreign Language	6
Social Science	6
Physical Education 110	1/2
Physical Education Activities Courses (optional)	1 1/2
TIER II	
	0
History 101, 102	6
TIER III	
	0
TIER IV	
	0
	32

MATHEMATICS (B.S.)

TIER I	
English Composition 101, 102.....	6
Foreign Language 101, 102 or 203, 204	6
Humanities or Social Science.....	6
Physical Education 110	1/2
Physical Education Activities Courses (optional)	1 1/2
TIER II	
Math 111, 112.....	6
Physics 111, 112	8
TIER III	
	0
TIER IV	
	0
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MODERN LANGUAGES

French (B.A.); German (B.A.); Spanish (B.A.)

TIER I	
English Composition 101, 102.....	6
History 101, 102	6
Science	6
Physical Education 110	1/2
Physical Education Activities Courses (optional)	1 1/2
TIER II	
Modern Language 203, 204 or higher	6
Other language or Social Science	6
TIER III	
	0
TIER IV	
	0

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PHILOSOPHY AND RELIGION (B.A.)

TIER I	
English Composition 101, 102.....	6
Foreign Language	6
Science	6
Social Science	6
Physical Education 110	1/2
Physical Education Activities Courses (optional)	1 1/2
TIER II	
Philosophy 101, 102	6
TIER III	
	0
TIER IV	
	0

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PHYSICS (B.S.) AND PRE-ENGINEERING

TIER I	
English Composition 101, 102.....	6
Foreign Language	6
Physical Education 110	1/2
Physical Education Activities Courses (optional)	1 1/2
TIER II	
Chemistry 111, 112	8
Math 111, 112	6
Physics 111, 112	8
TIER III	
	0
TIER IV	
	0

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URSINUS COLLEGE CATALOG

POLITICAL SCIENCE (B.A.)

TIER I	
English Composition 101, 102.....	6
History 101, 102	6
Science	6
Foreign Language	6
Physical Education 110	1/2
Physical Education Activities	
Courses (optional).....	1 1/2

TIER II

Political Science 100; 200,218, 237, 242, or 252.....	6
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TIER III

0

TIER IV

0

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PSYCHOLOGY (B.S.)

TIER I

English Composition 101, 102.....	6
Foreign Language	6
Math 101, 102 or 171, 241	6
Biology 101, 102.....	6
Physical Education 110	1/2
Physical Education Activities	
Courses (optional).....	1 1/2

TIER II

Psychology 101, 102, 111, 112.....	8
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TIER III

0

TIER IV

0

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PREPARATION FOR SECONDARY SCHOOL TEACHING IN THE SCIENCES AND MATHEMATICS (WHERE DIFFERENT FROM SUGGESTED DEPARTMENTAL PROGRAMS.)

I. CONCENTRATION IN MATHEMATICS - PHYSICS

TIER I

English Composition 101, 102.....	6
Foreign Language 101, 102 or 203, 204	6
Humanities or Social Sciences.....	6
Physical Education 110	1/2
Physical Education Activities	
Courses (optional)	1 1/2

TIER II

Physics 111, 112	8
Math 111, 112.....	6

TIER III

0

TIER IV

0

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II. CONCENTRATION IN PHYSICS

TIER I

English Composition 101, 102.....	6
Language 101, 102, or 203, 204.....	6
Humanities or Social Sciences.....	6
Physical Education 110	1/2
Physical Education Activities	
Courses (optional)	1 1/2

TIER II

Physics 111, 112	8
Math 111, 112.....	6

TIER III

0

TIER IV

0

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DIRECTORY



BOARD OF DIRECTORS

	<i>First Elected</i>	<i>Term Expires</i>
JOAN D. AIKENS, B.A., Washington, D.C.	1985	1990
ROBERT B. ANDERSON, B.S., M.S., Dallas, Texas	1972	1987
LILLIAN ISENBERG BAHNEY, B.A., LL.D., Myerstown	1951	1986
JAMES H. BAIRD, B.S., M.S. Sc.D., Wilmington, Delaware	1979	1989
RUSSELL C. BALL, JR., B.S., LL.D., Paoli	1968	1988
C. EUGENE BLUM, B.A., B.D., D.D., York	1950	1990
SAMUEL C. COREY, B.S., Fort Washington	1981	1986
JOHN E.F. CORSON, B.A., Plymouth Meeting	1983	1988
JAMES G. CROUSE, B.S., M.S., Royersford	1980	1990
THOMAS G. DAVIS, B.S., M.D., Radnor	1980	1990
HERMANN F. EILTS, B.A., M.A., LL.D., Wellesley, Massachusetts	1981	1986
NANCY JEANNE TALCOTT EVEREST, B.A., A.M., Yardley	1981	1986
MILLARD E. GLADFELTER, A.B., A.M., Ph.D., Sc.D., LL.D., D.H.L., D.C.L., L.H.D., Litt.D., Jenkintown	1967	1987
THOMAS P. GLASSMOYER, B.A., LL.B., LL.D., Willow Grove	1956**	1987
PETER HAVENS, B.A., M.B.A., Rosemont	1985	1990
WILLIAM F. HEEFNER, B.A., LL.B., LL.D., Perkasié	1969***	1990
MERRITT J. JEFFERS, B.S., M.S., B.D., D.D., Lebanon	1953	1988
ALEXANDER LEWIS, JR., B.S., M.S., Ph.D., Sc.D., Pittsburgh	1972	1987

* Did not serve 1968-1969

** Did not serve 1966-1967

*** Did not serve 1979-1980

URSINUS COLLEGE CATALOG

SHELDON E. MACKEY, B.A., B.D., D.D., LL.D., Exton	1960	1986
LOUIS N. MCCARTER, B.S., Malvern	1984	1989
BETTY UMSTAD MUSSER, B.A., Villanova	1982	1987
DONALD E. PARLEE, B.S., M.D., Doylestown	1983	1988
GLADYS PEARLSTINE, B.S., Collegeville	1984	1989
HENRY W. PFEIFFER, B.S., M.S., Chatham, N.J.	1978	1988
ROBERT POOLE, B.S., M.D., West Chester	1985	1990
CARL A. POSSE, Bryn Mawr	1979	1989
J. PERMAR RICHARDS, JR., L.H.D., Bryn Mawr	1978	1988
RICHARD P. RICHTER, B.A., M.A., LL.D., Collegeville	1976	1986
JACK W. ROBBINS, B.A., LL.B., Fort Washington	1984	1989
WILLIAM R. ROBBINS, B.S., West Hartford, Conn.	1971	1986
DAVID M. SCHMID, B.S., Norristown	1971	1986
E. EUGENE SHELLEY, B.S., LL.B., York	1971**	1987
JOHN C. SHETLER, A.B., B.D., Th.M., D.D., Collegeville	1976	1986
MARILYN L. STEINBRIGHT, B.S., LL.D., Norristown	1975	1985
ELIOT STELLAR, A.B., M.S., Ph.D., Sc.D., Ardmore	1979	1989
ALBERT E. TESKE, B.A., B.D., D.D., East Greenville	1984	1989
L. G. LEE THOMAS, S.B., L.H.D., LL.D., Bryn Mawr	1976	1986
ROY WENHOLD, B.S., M.D., Abington	1968	1988
WILLIAM G. WARDEN, B.A., Newtown Square	1982	1987

LIFE MEMBERS

THOMAS J. BEDDOW, B.A., J.D., LL.D., Tequesta, Florida	1958*	1985
RALPH CONNOR, B.S., LL.D., Sc.D., Sun City, Arizona	1971	1980
WILLIAM ELLIOTT, LL.D., Jupiter, Florida	1964	1984
WILLIAM S. PETTIT, B.S., M.S., Sc.D., Naples, Florida	1970	1984
CHARLES N. ROBERTS, B.S., Drexel Hill	1956	1985
THEODORE R. SCHWALM, LL.D., Lancaster	1963	1983
JOHN H. WARE, III, B.S., LL.D., Oxford	1975	1984
HARLESTON R. WOOD, B.A., LL.D., Gladwyne	1956	1984

** Did not serve 1981-1982

COMMITTEES OF THE BOARD OF DIRECTORS

EXECUTIVE: GLASSMOYER, CHAIR; Heefner, Pfeiffer, Steinbright, Crouse, Thomas, Davis, Warden, Corson, Gladfelter, Baird, Jeffers, Wenholt.

FINANCE: HEEFNER, CHAIR: Aikens, Corey, Corson, Lewis, Posse, Richards, Jack Robbins, Shelley.

DEVELOPMENT: HEEFNER, CHAIR: Baird, Corey, Corson, Crouse, Davis, Glassmoyer, Mackey, Musser, Parlee, Pfeiffer, Poole, Posse, Richards, Schmid, Shelley, Thomas, Warden.

BUDGET: DAVIS, CHAIR; Baird, McCarter, Ball, Corey, Crouse, Heefner, Anderson, Glassmoyer, Mackey, Schmid.

GOVERNMENT AND INSTRUCTION: GLADFELTER, CHAIR; Anderson, Davis, Eilts, Glassmoyer, Heefner, Musser, Pearlstine, Jack Robbins, Shetler, Stellar.

BUILDINGS AND GROUNDS: WARDEN, CHAIR; Baird, Everest, McCarter, Parlee, Poole, Shetler, Schmid, Teske.

LONG-TERM PLANNING: BAIRD, CHAIR; Blum, Davis, Poole, Lewis, McCarter, Posse, Shelley, Warden.

NOMINATING: CORSON, CHAIR; Blum, Corey, Glassmoyer, Parlee, Poole, Posse, Musser, Thomas.

ATHLETICS: JEFFERS, CHAIR; Bahney, Baird, Pfeiffer, Poole, Richards, Teske, Wenholt.

LIBRARY: WENHOLD, CHAIR; Aikens, Everest, Mackey, Pearlstine, Steinbright, Teske.

HONORARY DEGREES: GLADFELTER, CHAIR; Stellar, Glassmoyer, Baird, Eilts, Davis.

OTHER: Representatives to Campus Life Committee: Shetler, Musser.

OFFICERS OF THE CORPORATION

President: THOMAS P. GLASSMOYER, Willow Grove

Vice-President and Treasurer: WILLIAM F. HEEFNER, Perkasié

Secretary: HENRY W. PFEIFFER, Chatham, N.J.

Assistant Secretary: MARILYN L. STEINBRIGHT, Norristown

THE ADMINISTRATION

RICHARD P. RICHTER, M.A., LL.D., *President*

Administrative Officers

WILLIAM E. AKIN, Ph.D., *Dean of the College*

J. HOUGHTON KANE, J.D., *Dean of Student Life*

JOHN R. VAN NESS, Ph.D., *Vice President for College
Relations*

NELSON M. WILLIAMS, *Vice President for Business Affairs*

Administrative Staff

BLANCHE ALLEN, A.A., *Publications Coordinator*

BARBARA A. BORIS, B.S., *Registrar*

MONA S. CHYLACK, A.B., *Assistant to Vice President for
Business Affairs*

JUDITH CLAYCOMB, R.N., *Resident Nurse*

KAREN DALZELL, B.A., *Admissions Counselor*

ELIZABETH L. DAVIDSON, B.B.A., *Assistant to Vice
President for Business Affairs*

ROBERT R. DAVIDSON, Ed.D., *Director of Athletics*

MARY ELLEN DEWANE, B.A., *Director of Alumni Affairs*

MARGARET M. DILLON, B.A., *Admissions Counselor*

INGRID L. EVANS, M.A., *Director of Development*

LOUISE C. FAMOUS, R.N., *Resident Nurse*

EVA K. HESS, M.A., *Director of Student Financial Aid*

CHARLES A. JAMISON, M.L.S., *Acting Library Director*

GARY E. JOHNSON, B.A., *Assistant Director of Admissions*

DEBRA KAMENS, B.A., *Director of College Communications*

FREDERICK L. KLEE, B.A., *Director of Physical Facilities*

CLAIRE LAMBERT, A.A., *Development Associate*

M. SCOTT LANDIS, M.Div., M.A.P.C., *Campus Minister*

LINDA L. LONG, M.S., *Assistant Director of Evening School*

JANET S. LUFT, *Purchasing Coordinator*

SUSAN E. MADARA, B.A., *Assistant Director of Admissions*

JOHN C. MAERZ, M.D., *Assistant Medical Director*

BRUCE J. MENKOWITZ, M.D., *Orthopedic Surgeon*

HILDAGARDE MUENCH, M.S., *Assistant Dean of Student
Life*

C. JOSEPH NACE, M.B.A., *Director of Evening School*

BEVERLY A. OEHLERT, B.S., M.A., M.S., *Counselor*

JEFFREY PAGE, M.S., *Assistant Director of Student Activities/
Resident Director*

DAVID L. REBUCK, M.Ed., *Associate Dean of Student Life*

CARLA M. RINDE, M.S., *Director of Career Planning and
Placement*

MARY JANE ROTH, R.N., *Resident Nurse*

KENNETH L. SCHAEFER, B.A., *Director of Annual Giving*

PETER F. SMALL, Ph.D., *Assistant Dean of the College*

FRANK SMITH, B.A., *Director of Planned Giving*

WILLIAM S. STOLL, B.A., *Associate Director of Development*

KATHLEEN TACELOSKY, B.A., *Campus Visit Counselor*

ELLIOT TANNENBAUM, M.Ed., *Director of Sports
Information*

RICHARD J. WHATLEY, M.S., *Associate Dean of Student
Life; Assistant Director of Athletics*

BETTE WHITE, R.N., *Resident Nurse*

SARAH H. WIDMAN, B.A., *Editor, Ursinus College Bulletin*

STEPHEN K. WILLIAMS, M.D., *Medical Director*

LORRAINE ZIMMER, B.A., *Director of Admissions*

THE FACULTY 1985 - 1986

President of the College

RICHARD PAUL RICHTER, M.A., LL.D.,

B.A., Ursinus College; M.A., University of Pennsylvania; LL.D., Ursinus College.

Emeriti

EVERETT MARTIN BAILEY, M.A., Sc.D., *Professor of Health and Physical Educa-
tion, Emeritus*

B.P.E., B.S., Springfield College, M.A., Columbia University; Sc.D., Ursinus Col-
lege.

DONALD GAY BAKER, Ph.D., *Professor of Greek, Emeritus*

B.A., Haverford College; M.A., Ph.D., Harvard University.

ROBERT VICTOR COGGER, Ph.D., *Professor of Education, Emeritus*

B.A., State University of New York at Albany; M.A., Ph.D., Yale University.

JAMES PRESSLEY CRAFT, Ph.D., *Professor of Political Science, Emeritus*

B.S., U.S. Naval Academy; M.S., Massachusetts Institute of Technology; Ph.D.,
University of Pennsylvania.

URSINUS COLLEGE CATALOG

- ALFRED L. CREAGER, B.D., D.D., *Professor of Religion, Emeritus*
B.S., Ursinus College, B.D.; Lancaster Theological Seminary; D.D., Ursinus College.
- RAYMOND VICTOR GURZINSKY, M. Ed., *Professor of Health and Physical Education, Emeritus.*
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- RUTH ROTHENBERGER HARRIS, M.A., LL.D., *Dean of Student Life, Emeritus*
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- FRANK LEROY MANNING, Ph.D., *Professor of Mathematics, Emeritus*
B.S., Cornell University; M.S., Rutgers University; Ph.D., Cornell University.
- EUGENE HERBERT MILLER, Ph.D., LL.D., *Professor of Political Science Emeritus*
B.A., Ursinus College; M.A., Ph.D., Clark University; LL.D., Ursinus College.
- GARFIELD SIEBER PANCOAST, Ph.D., *Professor of Political Science, Emeritus*
B.S., Ursinus College; M.A., Ph.D., University of Pennsylvania.
- WILLIAM SCHUYLER PETTIT, M.S., Sc.D., *President, Emeritus; Professor of Chemistry, Emeritus*
B.S. in Chemistry; M.S., University of Pennsylvania; Sc.D., Ursinus College.
- WILLIAM FRANKLIN PHILIP, Mus. Doc., *Professor of Music, Emeritus*
Mus. B., Mus. M., Mus. Doc., State Academy of Church and School Music, Berlin.
- WILLIAM JOHN PHILLIPS, Ph.D., *Professor of English, Emeritus*
B.A., M.A., Ph.D., University of Pennsylvania.
- ALBERT LESTER REINER, Ph.D., *Professor of Romance Languages, Emeritus*
A.B., M.A., Ph.D., Harvard University.
- ELEANOR FROST SNELL, M.A., Sc.D., *Professor of Physical Education, Emeritus*
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- GEORGE GILBERT STOREY, Ph.D., *Professor of English, Emeritus*
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- LEVIE VAN DAM, Ph.D., *Professor of Biology, Emeritus*
B.S., M.S., Ph.D., Groningen State University, The Netherlands.
- CALVIN DANIEL YOST, JR., Ph.D., Litt. D., *Professor of English, Emeritus*
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Active

- WILLIAM ERNEST AKIN, Ph.D., *Dean and Professor of History (1979)*
B.A. and M.A., University of Maryland; Ph.D., University of Rochester.
- ALBERT CURTIS ALLEN, JR., Ph.D., *Professor of Biology (1970)*
B.A., College of Wooster; M.A., Ph.D., University of Michigan.
- THOMAS ORWELL ARMSTRONG, M.S., *Instructor in Economics (1985)*
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- JANE ANN BARTH, M.A., *Associate Professor of Chemistry* (1963)
 B.A., Mount Holyoke College; M.A., Smith College.
- JAMES RICHARD BEAN, Ph.D., *Lecturer in Psychology* (1985)
 B.A., Occidental College; M.A., and Ph.D., University of North Carolina.
- NICHOLAS O. BERRY, Ph.D., *Professor of Political Science* (1982)
 A.B., Bethany College; M.A., Ph.D., University of Pittsburgh.
- JOHN A. BLOOM, Ph.D., *Lecturer in Physics* (1984)
 B.A., Grinnell College; M.S., Ph.D., Cornell University.
- RICHARD PAUL BOEKENKAMP, Ph.D., *Visiting Professor of Earth Sciences* (1985)
 B.S., Franklin and Marshall College; M.S., Cornell University; Ph.D., Ohio State University.
- EGON BORGMANN, M.B.A., *Associate Professor of Economics and Business Administration* (1982)
 B.S., Temple University; M.B.A., The Wharton School, University of Pennsylvania.
- BARRY N. BOWERS, C.P.A., *Assistant Professor of Economics* (1979)
 B.S., Bloomsburg State College; M.B.A., Temple University; C.P.A. Commonwealth of Pennsylvania.
- ADELE PACK BOYD, M.Ed., *Associate Professor of Health and Physical Education* (1967)
 B.S., Ursinus College; M.Ed., Temple University.
- RICHARD STUART BREMILLER, M.A., *Associate Professor of Mathematics* (1967)
 B.S., United States Merchant Marine Academy; M.S., Drexel Institute of Technology; M.A., University of Delaware.
- STERLING R. BROWN, M.Ed., *Visiting Professor of Health and Physical Education* (1982)
 B.S., M.Ed., East Stroudsburg State College.
- BONNIE E. SHAW BUCHAK, M.B.A., *Lecturer in Economics and Business Administration* (1985)
 B.S., Allegheny College M.S., University of Indiana; M.B.A., Drexel University.
- CATHERINE ANNE CHAMBLISS, Ph.D., *Associate Professor of Psychology* (1979)
 B.A., Yale University; M.S. and Ph.D., University of Miami.
- PAMELA SUE CHLAD, M.S., *Assistant Professor of Health and Physical Education, Head Trainer in Athletics* (1976)
 B.S. in Nursing, Widener College; R.N.; A.T.C., M.S., Temple University.
- HUGH R. CLARK, Ph.D., *Assistant Professor of History* (1982)
 B.A., M.A., Ph.D., University of Pennsylvania.
- EDWARD JOSEPH CLINTON, M.A., *Lecturer in Education* (1974)
 B.A., St. Charles Borromeo Seminary; M.A., Villanova University.
- ROBIN ADAM CLOUSER, Ph.D., *Associate Professor of German* (1974)
 B.A., Ursinus College; A.M., University of Pennsylvania; Ph.D., University of Kansas.

URSINUS COLLEGE CATALOG

- JOHN L. COBBS, Ph.D., *Assistant Professor of English* (1984)
B.A., Haverford College; Ph.D., University of North Carolina.
- ROGER D. COLEMAN, Ph.D., *Associate Professor of Mathematics* (1979)
B.A. and Ph.D., The Johns Hopkins University.
- MELVIN CREEL, Ed.D., *Associate Professor (Visiting) of Health Physical Education and Recreation* (1985)
B.S., Ed.M., University of Nevada at Las Vegas; Ed.D., University of Alabama.
- JEANINE KALLANDER CZUBAROFF, Ph.D., *Lecturer in Communication Arts* (1981)
B.A., Tufts University; M.A., Boston University; Ph.D., Temple University.
- ROBERT RAND DAVIDSON, Ed.D., *Director of Athletics; Associate Professor of Health and Physical Education* (1972)
B.S., Northeastern University; M.S., Springfield College; Ed.D., Temple University.
- JAMES DOUGLAS DAVIS, M.A., *Professor of History* (1946)
B.A., Ursinus College; M.A., University of Pennsylvania.
- LOUIS AUBREY DECATUR, Ph.D., *Professor of English* (1970)
A.B., M.A., Ph.D., University of Maryland.
- ROBERT C. A. DE VOS, M.A., *Instructor in Economics and Business Administration* (1981)
B.A., Duke University; M.A., University of North Carolina.
- GEOFFREY DOLMAN, M.A., *Professor of English* (1949)
B.A., M.A., University of Pennsylvania.
- CATHERINE S. DOUGHTY, M.S., *Lecturer in English* (1984)
B.A., Ursinus College; M.S., University of Pennsylvania.
- STEWART ROSS DOUGHTY, Ph.D., *Associate Professor in History* (1975)
B.A., Ursinus College; M.A., Ph.D., Harvard University.
- ROY HELVERSON DUNGAN, Ed.D., *Assistant Professor of Education* (1979)
B.S., Millersville State College; Ed.M. and Ed.D., Temple University.
- SHIRLEY K. EATON, Ph.D., *Assistant Professor of Romance Languages* (1980)
B.S., Boston University; M.A., Middlebury College; Ph.D., University of Wisconsin, Madison.
- JUAN ESPADAS, Ph.D., *Associate Professor in Romance Languages* (1972)
B.A., M.A., University of Illinois; Ph.D., University of Pennsylvania.
- GEORGE C. FAGO, Ph.D., *Professor of Psychology* (1970)
A.B., Franklin and Marshall College; M.S., Ph.D., University of Pittsburgh.
- MARY BLAIR FIELDS, Ph.D., *Associate Professor of Biology* (1975)
B.A., Otterbein College; M.S., Ph.D., Miami University.
- GERARD JOSEPH FITZPATRICK, Ph.D., *Assistant Professor of Political Science* (1983)
B.A., Bloomsburg State College; M.A., Ph.D., University of Virginia.
- RICHARD MUMMA FLETCHER, Ph.D., *Professor of Psychology* (1956)
B.A., Franklin and Marshall College; Ph.D., Pennsylvania State University.

- JOHN HENRY FRENCH, M.M., *Assistant Professor of Music* (1979)
 B.M., Philadelphia College of the Performing Arts; M.M., Westminster Choir College.
- JUDITH EMMA FRYER, M.S. in L.S., *Periodicals Librarian* (1969)
 B.A., Ursinus College; M.S. in L.S., Drexel Institute of Technology.
- THOMAS EDWARD GALLAGHER, Ph.D., *Assistant Professor of Anthropology and Sociology* (1977)
 B.A., University of Delaware; M.A., Ph.D., Temple University.
- THOMAS NELSON GRANT, JR., M.A. *Lecturer in Education* (1985)
 A.B., Albright College; M.A., University of Pennsylvania
- TIMOTHY D. HACKENBERG, M.A., *Lecturer in Economics and Business Administration* (1985)
 B.A., University of California, Irvine; M.S., Temple University.
- NANCY LINEKEN HAGELGANS, Ph.D., *Associate Professor of Mathematics* (1978)
 A.B., Goucher College; M.A. and Ph.D., Johns Hopkins University; M.S., Villanova University.
- COLETTE TROUT HALL, Ph.D., *Assistant Professor (Visiting) of French* (1983)
 License, Universite de Nanterre; M.A., Ph.D., Bryn Mawr College.
- ELIZABETH-ANN HANKEL, M.L.S., *Instructor and Media Services Librarian* (1985)
 B.A., University of Delaware; M.S., Drexel University.
- ELIZABETH M. HANKS, M.S., *Lecturer in Spanish* (1985)
 B.A., La Salle University; M.A., Temple University.
- KEITH JORDAN HARDMAN, Ph.D., *Associate Professor of Philosophy and Religion* (1967)
 B.A., Haverford College; B.D., Princeton Theological Seminary; M.A., Columbia University; Ph.D., University of Pennsylvania.
- CINDY K. HARRIS, C.P.A., *Assistant Professor of Economics* (1984)
 B.A., M.B.A., University of Pennsylvania.
- JOYCE ELIZABETH HENRY, Ph.D., *Associate Professor of English* (1972)
 B.A., University of Michigan; M.A., Ph.D., University of Wisconsin.
- H. OBER HESS, L.L.B., *Visiting Professor of Political Science* (1985)
 B.A., Ursinus College; L.L.B., Harvard University.
- RONALD EUGENE HESS, Ph.D., *Professor of Chemistry* (1966)
 B.S., Lock Haven State College; Ph.D., Cornell University.
- BARBARA S. ILLOWSKY, A.M., *Instructor in Mathematics* (1984)
 B.S., State University of New York at Albany; A.M., University of Pennsylvania.
- CHARLES A. JAMISON, M.L.S., *Assistant Professor and Acting Library Director* (1982)
 B.A., Stockton State College; M.L.S., Drexel University.
- PETER GORDON JESSUP, Ph.D., *Professor of Mathematics* (1973)
 A.B., Kenyon College; M.S., Ph.D., Lehigh University.

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- MARTIN W. JOHNSON, M.A., *Lecturer in Mathematics* (1982)
B.S., Kutztown State College; M.B.A., Temple University; M.A., University of Kentucky.
- HOWARD LLOYD JONES, JR., M.A., *Professor of English* (1947)
B.A., University of Delaware; M.A., University of Pennsylvania.
- RUTH ADELLA KANAGY, M.A., *Lecturer in Japanese* (1985)
B.A., Eastern Mennonite College; M.A., University of Michigan.
- JAMES HOUGHTON KANE, J.D., *Dean of Student Life and Assistant Professor of Political Science* (1977)
B.A., Houghton College; M.A., University of Pennsylvania; J.D., Temple University.
- SYLVIA K. KANE, M.A., *Lecturer in History* (1985)
B.A., Alvernia College; M.A., Kutztown State College.
- CONRAD EDWARD KRUSE, D.Sc., *Associate Professor of Biology* (1967)
B.Sc., D.Sc., Philadelphia College of Pharmacy and Science; M.Sc., University of Wisconsin.
- BERNARD F. LENTZ, Ph.D., *Associate Professor of Economics* (1982)
B.A., Oberlin College; M.A., Ph.D., Yale University.
- JOYCE T. LIONARONS, Ph.D., *Assistant Professor of English* (1984)
B.A., University of Colorado; M.A., Ph.D., University of Denver.
- ANNETTE VOCK LUCAS, Ph.D., *Associate Professor of French* (1967)
B.A., George Washington University; M.A., New York University; Ph.D., Bryn Mawr College.
- DEBORAH L. MALONE, M.L.S., *Instructor and Technical Services Librarian* (1985)
B.A., Ursinus College; M.L.S., Drexel University.
- RICHARD KEVIN MATTHEWS, Ph.D., *Associate Professor (Visiting) of Political Science* (1985)
B.A., Muhlenberg College; M.A., University of Delaware; Ph.D., University of Toronto.
- KATHLEEN KAUFMAN MCQUAID, M.A., *Instructor in Political Science* (1984)
B.A., M.A., Temple University.
- DEBORAH LYNN MCQUISTON, C.P.A., *Lecturer in Economics and Business Administration* (1985)
B.B.A. and M.P.A., University of Texas at San Antonio.
- HUGHAN CONRAD MEYER, JR., M.A., *Associate Professor of Economics* (1969)
B.A., Ursinus College; M.A., University of Pennsylvania.
- WILLIAM J. MIDDLETON, Ph.D., *Lecturer in Chemistry* (1985)
B.S. and M.S., North Texas State University; Ph.D., University of Illinois.
- JAY KENNETH MILLER, Ph.D., *Associate Professor of Communication Arts* (1984)
B.A., M.C.R.P., Rutgers University; M.A., Miami University; Ph.D., Union Graduate School, Antioch University.

- ANGELA H. MORRISON, M.Ed., *Assistant Professor of Health and Physical Education* (1980)
 B.S. and M.Ed., Trenton State College.
- C. JOSEPH NACE, M.B.A., *Director of Evening School and Visiting Professor of Economics and Business Administration* (1979)
 B.S. and M.B.A., Drexel University.
- DOUGLAS NAGY, Ph.D., *Assistant Professor of Physics* (1979)
 B.S., M.S. and Ph.D., Pennsylvania State University.
- JEFFREY W. NESLEN, Ph.D., *Assistant Professor of Mathematics* (1983)
 B.S., Hobart College; Ph.D., University of Rochester.
- FRANCES CLAIRE NOVACK, Ph.D., *Assistant Professor of French* (1979)
 B.A., Barnard College; Ph.D., Cornell University.
- DOMINIC V. O'BRIEN, Ph.D., *Associate Professor of Education* (1985)
 B.A., La Salle College; M.A. and Ph.D., University of Pennsylvania.
- WILLIAM THOMAS PARSONS, Ph.D., *Professor of History* (1947)
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- PETER FLINT PERRETEN, Ph.D., *Associate Professor of English* (1973)
 B.A., Moorhead State College; M.A., Idaho State University; Ph.D., University of Delaware.
- JOHN DAVID PILGRIM, Ph.D., *Professor of Economics* (1974)
 B.A., Grinnell College; Ph.D., Vanderbilt University.
- CONSTANCE WARREN POLEY, B.S., *Instructor in Health and Physical Education* (1952)
 B.S., Ursinus College.
- JILL L. RANDOLPH, M.A., *Lecturer in English* (1984)
 B.A., Ursinus College; M.A., Villanova University.
- BRUCE EDWARD RIDEOUT, Ph.D., *Assistant Professor of Psychology* (1979)
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- PATRICIA RICHARDS SCHROEDER, Ph.D., *Assistant Professor of English* (1983)
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- BLANCHE BEATRICE SCHULTZ, M.S., *Professor of Mathematics* (1946)
 B.S., Ursinus College; M.S., University of Michigan.
- RAY KARL SCHULTZ, Ph.D., *Professor of Chemistry*. (1965)
 B.S., Muhlenberg College; M.S., Ph.D., Lehigh University.
- FAYE FRENCH SHAW, M.S., *Instructor in Chemistry* (1977)
 B.A., University of California; M.S., West Chester State College.
- MICHAEL F. SHAW, M.A., *Lecturer in Mathematics* (1984)
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- JANE PERRETEN SHINEHOUSE, P.T., *Associate Professor of Biology* (1973)
 B.S., Ursinus College; P.T., University of Pennsylvania.

URSINUS COLLEGE CATALOG

- JOHN WINFIELD SHUCK, Ph.D., *Associate Professor of Mathematics* (1977)
B.S., Massachusetts Institute of Technology; M.S., Tufts University; Ph.D., North-eastern University.
- JAMES M. SIDIE, Ph.D., *Associate Professor of Biology* (1983)
B.S., M.S., Ph.D., Notre Dame University.
- PETER FORREST SMALL, Ph.D., *Assistant Dean and Associate Professor of Biology* (1972)
B.S., Austin Peay State University; M.S., East Tennessee State University; Ph.D., Miami University.
- EVAN SAMUEL SNYDER, Ph.D., *Professor of Physics* (1944)
B.S., Ursinus College; M.S., Ph.D., University of Pennsylvania.
- TERESA SCOTT SOUFAS, Ph.D., *Assistant Professor of Spanish* (1981)
B.A., Emory University; M.A., University of South Carolina; Ph.D., Duke University.
- MARGARET BROWN STAIGER, B.A., *Reference and Acquisitions Librarian* (1956)
B.A., Ursinus College.
- ROGER POWELL STAIGER, Ph.D., *David Laucks Hain Professor of Chemistry* (1943)
B.S., Ursinus College; M.S., Ph.D., University of Pennsylvania.
- JOELLE L. STOPKIE, Ph.D., *Lecturer in French* (1984)
Bac., University of Bordeaux; Lic., University of Paris; M.A., New York University; Ph.D., Bryn Mawr College.
- HARRY CLAY SYMONS, M.A., *Professor of Economics* (1947)
B.A., M.A., Pennsylvania State University.
- MARTHA CARROLL TAKATS, Ph.D., *Associate Professor of Physics* (1969)
B.A., Wellesley College; M.S., University of Wisconsin; Ph.D., University of Pennsylvania.
- LYNN M. THELEN, Ph.D., *Assistant Professor of German* (1982)
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- MARY K. TIRYAK, M.A., *Lecturer in English* (1984)
B.A., John Carroll University; M.A., Temple University.
- VICTOR J. TORTORELLI, Ph.D., *Assistant Professor of Chemistry* (1981)
B.S., Manhattan College; M.A., Ph.D., Princeton University.
- JOHN R. VAN NESS, Ph.D., *Adjunct Professor of Anthropology* (1984)
B.A., The Colorado College; M.A., Ph.D., University of Pennsylvania.
- DERK VISSER, Ph.D., *Professor of History* (1968)
M.A., University of Pennsylvania; Ph.D., Bryn Mawr College.
- TINA D. WAILGUM, M.Ed., *Instructor of Health and Physical Education* (1983)
B.S., Ursinus College; M.Ed., Temple University.

RICHARD JACOB WHATLEY, M.S., *Associate Dean of Student Life; Associate Professor of Health and Physical Education; Assistant Director of Athletics* (1959)
 B.S., University of Maine; M.S., Springfield College.

MARGARET M. WHITTAKER, M.S., *Lecturer in Biology* (1983)
 B.A., University of Delaware; M.S., University of Pennsylvania.

JOHN MOORE WICKERSHAM, Ph.D., *Associate Professor of Classics* (1972)
 B.A., M.A., University of Pennsylvania; B.A., New College, Oxford; Ph.D., Princeton University.

WILLIAM BEDFORD WILLIAMSON, Ed.D., D.D., *Professor of Philosophy* (1965)
 B.S., S.T.B., Ed.D., Temple University; S.T.M., Lutheran Theological Seminary;
 M.A., Lehigh University; D.D., National University.

THEODORE ANDREW XARAS, M.F.A., *Assistant Professor of Fine Art* (1973)
 B.F.A., Philadelphia College of Art; M.F.A., Tyler School of Art.

CHARLES C. YOHN, M.Ed., *Lecturer in Education* (1975)
 B.S. in Ed., Shippensburg State College; M.Ed., Kutztown State College.

CARLA WELSH YOUNG, M.A., *Lecturer in Philosophy* (1978)
 B.A., Connecticut College; M.A., Bryn Mawr College.

FREDERICK DONALD ZUCKER, Ph.D., *Professor of Political Science* (1958)
 B.A., Rutgers University; M.A., Ph.D., Pennsylvania State University; M.A., Bryn Mawr College.

Date in parentheses is date of first appointment at Ursinus College.

URSINUS COLLEGE CATALOG

OFFICERS OF THE FACULTY

Chairman, PRESIDENT RICHTER

Secretary, PROFESSOR VISSER

FRESHMAN ADVISERS

Coordinators of Freshman Advising: Deans Small and Rebeck; Professor Chambliss

Dean Akin	Professor French	Mrs. Oehlert
Professor Berry	Professor Fryer	Dean Rebeck
Ms. Boris	Professor Gallagher	Professor Rideout
Professor Chambliss	Professor Hagelgans	Mrs. Rinde
Professor Clark	Professor Hardman	Mr. Schaefer
Professor Cobbs	Mrs. Hess	Professor Schroeder
Professor Coleman	Mr. Johnson	Professor B. Schultz
Ms. Dalzell	Professor Jones	Professor R. Schultz
Professor Davidson	Professor Lucas	Mrs. Shaw
Ms. Dillon	Miss Madara	Professor Shinehouse
Professor Dolman	Professor Meyer	Dean Small
Professor Dungan	Professor Morrison	Professor Soufas
Professor Eaton	Dean Muench	Professor Thelen
Professor Espadas	Professor Neslen	Professor Tortorelli
Professor Fields	Professor Novack	Dean Whatley
Professor Fitzpatrick		Mrs. Zimmer

MAJOR PROGRAM ADVISERS

American Public Policy, Professor Berry

Applied Mathematics/Economics, Professor Shuck

Biology Department, Professor Allen

Chemistry Department, Professor R. Staiger

Classical Studies Department, Professor Wickersham

Economics and Business Administration Department, Professor Lentz

English Department, Professor Perreten

Health, Physical Education and Recreation Department, Professor Davidson

History Department, Professor Doughty

International Relations, Professor Berry

Mathematics and Computer Science, Professor Shuck

Modern Languages Department, Professor Lucas

Philosophy and Religion Department, Professor Williamson

Physics Department, Professor Snyder

Political Science Department, Professor Berry

Psychology Department, Professor Fago

PRE-PROFESSIONAL ADVISERS

Education, Professor O'Brien

Engineering, Professor Snyder

Law, Professor Fitzpatrick

Medicine, Professor Hess

FOREIGN STUDENT ADVISER

Professor Eaton

CLASS ADVISERS

Class of 1990, Professor Fitzpatrick

Class of 1989, Professor Tortorelli

Class of 1988, Professor Espadas

Class of 1987, Mrs. Shaw

FACULTY COMMITTEES

Committees appointed by the President

Administrative Committees

Academic Standing: Akin, chairman; Boris, Jones, Kane, Muench, Richter, Small, Tortorelli, Zimmer.

Admissions: Richter, chairman; Akin, Dalzell (voice), Dillon (voice), Fitzpatrick, Johnson, Madara, Rebeck (voice), Schroeder, Small, Tancelosky (voice), Zimmer.

Scholarship: Small, chairman; Dolman, E. Hess, Pilgrim, Rebeck (voice), Richter, Schaefer, Zimmer.

Student Activities: Ashman, chairman; Bowers, Henry, Landis, Neslen, Novack, Page, Thelen. Students: Mary Ellen Deskins, Lynne Edwards, Brian Finger, Debbie McManus, Heather McCreary, Jeanne Radwanski, Manisha Shendge.

Professional School Credentials: Hess, chairman; Akin, Allen, Clouser (fall chair), Fields, Rinde, B. Schultz, Shinehouse, Snyder, R. Staiger.

Policy Committees

Athletics: Davidson, chairman; BreMiller, Dolman, Dungan, Hardman, Neslen, Shaw. Students: Michael Maratea, Keith Wood.

Computer Policy: Jessup chairman; Akin, Barth, Chambliss, Hagelgans, Jamison, Lentz, Morrison, Nace, Nagy, Novack, Schroeder, Sidie. Student: David Patrick.

Forum and Cultural Affairs: Ashman, chairman; Berry, Eaton, French, Hall, Landis, Sidie, Xaras. Students: Linda Giunta, Kevin Murphy, Susan Reilly, Cindy Trentacosti, Cheryl Keenan.

Freshman Orientation: Ashman, chairman; E. Hess, Kane, Rebeck, Small, Williams, Zimmer.

Library: Jamison, chairman; Akin, Cobbs, Coleman, Davis, de Vos, R. Doughty, Kruse, Miller, Nagy, Rideout, Williamson. Students: Brian Kennedy, Jean Becker.

Parents' Day: Ashman, chairman; Borgmann, Boyd, Kane, Parsons, Shaw, Rideout, Van Ness, Whatley; Students: Lynne Edwards, Lisa Gilmore.

Student Publications: Borgmann, chairman; Ashman, Cobbs, Jamison, Kamens, Lionarons, Miller, Perreten. Students: Brian Finger, Tony Fiore, Chris DeSantis, Joan Marie Gagliardi, Anne Kennedy, Jeanne Pacilio, Joseph Pirro, Sara Seese, Rosemary Wuenschel, Allison Brown, Heather Camp, Roxalana Telepko, Angela Salas, Patti Yoder, Lori Winchester.

URSINUS COLLEGE CATALOG

Teacher Education Advisory Committee: O'Brien, chairman; BreMiller, Davidson, DeCatur, R. Doughty, Dungan, Espadas, Fields, Fitzpatrick, Fletcher, Fryer, Small, Snyder, R. Staiger, Symons, Wickersham. Students: Lynne Messier, Tammy Hoffman; Diane Johnson, Timothy Weible (alternates).

Special Committees with Academic Functions

College Scholars: DeCatur, chairman; Gallagher, Shinehouse, Wickersham.

Japanese Studies: Clark, chairman; Borgmann, DeCatur, R. Doughty, McQuaid, Van Ness.

Committees to which Faculty Elect Members

Academic Council: Akin, chairman; Clark, DeCatur, Gallagher, Jessup, McQuaid, Richter, Rideout, R. Schultz, Shinehouse, Soufas; Student: Linda Giunta.

Advisory Committee on College Priorities: Richter, chairman; Akin, French, Kane, Meyer, Small, Takats, Van Ness, Williams (also functions as *Campus Planning Group* with the inclusion of Pligrim, Zimmer; Students: Brian Kennedy, Jack Halpin.

Advisory Committee on Faculty Retention, Promotion and Tenure: Richter, chairman; Akin, Gallagher, Jones, Takats, Visser.

Appeals Committee: Barth, Espadas, Symons. Three administrative representatives to be appointed by the President.

Campus Life Committee: Colette Amarante and James McKeon (co-chairmen); Cobbs, Kane, Landis, Neslen, Rebuck, Shetler (Board), M. Staiger, Thelen. Students: Colette Amarante, William Connolly, Josh Krassen, James McKeon, Staci Stauffer.

Campus Investment Committee Representative: Meyers.

Board Buildings and Ground Committee Representatives: Hall, Takats; Students: Lynne Messier, Kevin Murphy, Debbie Morgan.

Judiciary Board: Bremiller, chairman; Coleman, R. Doughty, Shuck. Alternates: Barth, Soufas, Tortorelli. Students: David Sergison, Ed Snow, Cindy Trentacosti. Alternates: David Carroll, Sue Citta.

Ad Hoc Committee

Task Force on Faculty Evaluation: Lucas, chairman; Akin, BreMiller, Fletcher, French, Meyer, Shuck, R. Staiger. Students: Jeanne Radwanski, David Ricci.

Committee on Wellness: Oehlert, chairman; Boyd, Claycomb, Glick, Kamens, Landis, Muench, Neslen. Students: Heather McCreary, Robert Russell, Amit Shah, Brad Trout, Sally Umble.

Dining Hall Committee: Whatley, chairman; Glick, Rebuck, Williams. Students: Lynne Edwards, Brian Finger, Anthony Fiore, Joan Gagliardi, Daniel Healy, Denise Sadjian, Ann Salchow, Rosemary Wuenchel, Cara Yingst.

Nomination Procedures Committee: Snyder, chairman; Clouser, Fitzpatrick, Hall, Jamison, Lentz, Shinehouse, Tortorelli, Williamson.

PRIZES, HONORS, DEGREES

AWARDED IN 1985

- The Alumni Senior Award—Susan Louise Hardweg, '85, Prodomos A. Ververeli, '85
- The American Chemical Society Award—David George Reed, '85
- The American Institute of Chemists Award—Carol Parker McMillin, '85
- The Cyrus E. Beekey Prize—Mark Robert Ghaul, '85
- The Boeshore Prize—Paul Anthony Manzini
- The Chemistry Laboratory Technique Award—C. Ronald Marcy, Jr., '85
- The George Ditter Prize—Gavin Purcell Lentz, '85
- The Ehret Prize—James A. Moyer, Jr., '85
- The Edwin M. Fogel Prize—Elizabeth A. Higham, '85, Ann-Marie A. Shelley, '85
- The Philip H. Fogel Memorial Prize—Michael Andrew Renninger, '85
- The French Award—Ila Ashton Rippey, '85
- The Thomas P. and Frances T. Glassmoyer Scholastic Award—Prodomos A. Ververeli, '85
- The Thomas Jefferson Prize—Carolyn Maria Gretzinger, '85
- The Ronald C. Kichline Prize—William Kenneth Lacy, '85, Gavin Purcell Lentz, '85
- The William L. Lettinger Chemistry Award—Scott Douglas Souders, '85
- The Elizabeth Rockefeller McCain Prize—Gregory Allen Fraser, '86
- The Merck Award—Charlene Eddy Milne, '85
- The Professor Eugene H. Miller Prize—Stefanie Ann Boinski, '85
- The George E. Nietzsche Prize—LeRoy Glenn Moser, '85
- Alan P. Novak Scholarship in Communication Arts—Jerome Francis Fraiser, III, '85
- The Paisley Prize—Michael Andrew Renninger, '85
- The Pennsylvania Institute of Certified Public Accountants—Sharolyn Ann Mierzejewski, '85
- Professor William J. Phillips Prize—Joanne E. Weinstein, '85
- The Robert Trucksess Prize—Louis R. Busico, '85
- The Ursinus Women's Club Prize—Marsha Lee Herb, '85
- The Wagman Prize—Brian Paul Smith, '85
- Wall Street Journal Award—John Michael Fessick, '85
- The Professor Elizabeth B. White Prize—LeRoy Glenn Moser, '85
- The Whitian Prize—Nancy Ann Emmons, '88

URSINUS COLLEGE CATALOG

COMMENCEMENT HONORS

VALEDICTORIAN:	Holly Jayne Hayer	
SALUTATORIAN:	Prodromos A. Ververeli	
SUMMA CUM LAUDE:	Holly Jayne Hayer David George Reed	Prodromos A. Ververeli
MAGNA CUM LAUDE:	James Doghramji John Michael Fessik Mark Robert Ghaul	Jonathan A. Nigrine Michael Andrew Renninger Tod Arthur Toth
CUM LAUDE:	Stefanie Ann Boinski Susan Jeanne Boyce David Andrew Clemens John Carlton Farrell Timothy Paul Geiselman Dorothy Mary Gibbons Carolyn Maria Gretzinger Randi Lynn Karpinski Thomas Knight Joanne Eileen Kohler Christine Mary McCrea	Sharolyn Ann Mierzejewski Charlene Eddy Milne Douglas Nevins Alan Douglas Rozzi Kathleen Ann Stauffer Linda Ann Troutman Tania M. Valcarcel Nancee Ann Vogel Charles Paul Wellard Christopher Yatsko

EVENING SCHOOL HONORS

MAGNA CUM LAUDE:	Eileen M. Cain Patricia Marion Caporelli Catherine A. Pfanders	Barbara E. Spaniel Nancy Mauger Winters
CUM LAUDE:	Denise Lynn Clark Robyn R. Fusco Sandra Herb	Judith L. Jacobson Dominic M. Martorana Rebecca Galambos Stevens

DEPARTMENTAL HONORS

BIOLOGY	Thomas Knight	
CHEMISTRY	David George Reed	
ECONOMICS	John Michael Fessick	
FRENCH	Carolyn Maria Gretzinger	
HISTORY	Thomas William Gregory	
PHILOSOPHY AND RELIGION	Michael Andrew Renninger	
POLITICAL SCIENCE	Stefanie Ann Boinski	
PSYCHOLOGY	Susan Jeanne Boyce Christine Mary McCrea	Jonathan A. Nigrine
SPANISH	Holly Jane Hayer	

CHAPTER SCHOLARS

Susan Jeanne Boyce
 James Doghramji
 John Michael Fessick
 Mark Robert Ghaul
 Carolyn Maria Gretzinger
 Holly Jayne Hayer
 Joanne Eileen Kohler

Jonathan A. Nigrine
 David George Reed
 Michael Andrew Renninger
 Alan Douglas Rozzi
 Tania M. Valcarcel
 Prodromos A. Ververeli

SIGMA XI CLUB

Paul Ronald Hope
 Robert Arnold Kumpf
 C. Ronald Marcy, Jr.

Jonathan A. Nigrine
 David George Reed

DEGREES—HONORARY

Yvonne Virginia Delk
 Vartan Gregorian
 Shozo Kodama
 Robert Paul Smith

Doctor of Divinity
 Doctor of Letters
 Doctor of Humane Letters
 Doctor of Laws

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LINDBACK AWARD
 Peter F. Perreten

PROFESSIONAL ACHIEVEMENT AWARD
 Evan S. Snyder

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Prodromos A. Ververeli
 Daniel F. Wagman
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Ange-Marie Woods
 Dean Anthony Yannarell
 Sachiko Yoneyama

ALUMNI ASSOCIATION

President—Carol K. Haas, Ph.D., '70, 98 Walnut Drive, North Shores, Seaford, Del. 19973

Vice President—Rev. Gregory R. Wenhold, '75, 348 West Valley Forge Road, King of Prussia, Pa. 19406

Secretary-Treasurer—John N. Idler, '58, 1014 Hawthorne Lane, Ft. Washington, Pa. 19034

Alumni Representatives

Judith Brinton Moyer, '60, Horseshoe Trail, Chester Springs, Pa. 19425
 Jenefer Price Shillingford, '54, 409 Oak Lane, Wayne, Pa. 19087
 Shirley Cressman Metzger, '73, 631 Callowhill Street, Perkasie, Pa. 18944
 Betty Brown Dando, '45, 616 Bridle Road, Glenside, Pa. 19038
 George E. Saurman, '50, 360 Mattison Avenue, Ambler, Pa. 19002
 Ronald E. Bywaters, '77, 2508 Line Lexington Road, Hatfield, Pa. 19440

Faculty Representatives

Adele P. Boyd, '53, 113 East Germantown Pike, Norristown, Pa. 19401
 Evan S. Snyder, '44, 80 Linfield Road, Collegetown, Pa. 19426

Alumni Directors

Nancy Jeanne Talcott Everest, '47, 6 Central Drive, Yardley, Pa. 19067
 Betty Umstad Musser, '45, 231 Atlee Road, Wayne, Pa. 19087
 Donald E. Parlee, M.D., '55, 75 Foxcroft Drive, Doylestown, Pa. 18901
 James H. Baird, '38, 38 Ringfield, Chadds Ford, Pa. 19317
 Robert Poole, M.D., '50, 1008 North New Street, West Chester, Pa. 19380

COLLEGE CALENDAR FOR 1986-87

1986

January	20	Monday	Second semester begins, 8:00 a.m.
January	31	Friday	Last day to add courses*
February	28	Friday	Preferred date for filing financial aid applications (F.A.F.)
March	7	Friday	Last day to drop courses without recording a failure*
March	7	Friday	Mid-semester grades due, 4:00 p.m.
March	7	Friday	Spring vacation begins, 5:30 p.m.
March	17	Monday	Spring vacation ends, 8:00 a.m.
March	18	Tuesday	Fall term pre-registration begins
March	27	Thursday	Fall term pre-registration ends
March	27	Thursday	Easter recess begins, 5:30 p.m.
April	1	Tuesday	Easter recess ends, 8:00 a.m.
May	1	Thursday	Last day to file P.H.E.A.A.
May	6	Tuesday	Last day of classes
May	6	Tuesday	Last day to drop a course
May	7	Wednesday	Reading Day
May	8	Thursday	Second semester exams begin
May	15	Thursday	Second semester exams end
May	18	Sunday	Baccalaureate Service, 10:30 a.m.
May	18	Sunday	Commencement, 2:30 p.m.
May	27	Tuesday	Summer School begins, 9:00 a.m.
May-June	30-1	Fri.-Sun.	Alumni Weekend
June	14	Saturday	Freshman Orientation
June	21	Saturday	Freshman Orientation
August	21	Thursday	Summer School ends, 12:00 noon
August	28	Thursday	Faculty conference
August	30	Saturday	Freshman Convocation, 4:00 p.m.
September	1	Monday	First Semester begins, 8:00 a.m.
September	12	Friday	Last day to add courses*
September	27	Saturday	Parents' Day
October	11	Saturday	Homecoming Day
October	17	Friday	Last day to drop courses without recording a failure*
October	17	Friday	Mid-semester grades due, 4:00 p.m.
October	17	Friday	Fall recess begins, 5:30 p.m.
October	21	Tuesday	Fall recess ends, 8:00 a.m.
October	22	Wednesday	Mid-semester grades mailed (freshmen)
November	2	Sunday	Founders' Day
November	3	Monday	Spring term pre-registration begins
November	14	Friday	Spring term pre-registration ends
November	26	Wednesday	Thanksgiving recess begins, 5:30 p.m.
December	1	Monday	Thanksgiving recess ends, 8:00 a.m.
December	10	Wednesday	Last day of classes
December	10	Wednesday	Last day to drop a course
December	11	Thursday	Reading Day
December	12	Friday	First Semester examinations begin
December	19	Friday	First semester examinations end

*Note: These dates do not apply to health, physical education and recreation activities courses for non-majors. Deadlines for adding these courses are Jan. 24, March 21, Sept. 5, and Oct. 24, 1986. Deadlines for dropping without recording a failure are Feb. 12, April 11, Sept. 24, and Nov. 12, 1986.

COLLEGE CALENDAR FOR 1986-87

1987

January	19	Monday	Second Semester begins, 8:00 a.m.
January	30	Friday	Last day to add courses*
February	27	Friday	Preferred date for filing financial aid applications (F.A.F.)
March	6	Friday	Last day to drop courses without recording a failure*
March	6	Friday	Mid-semester grades due, 4:00 p.m.
March	6	Friday	Spring vacation begins, 5:30 p.m.
March	16	Monday	Spring vacation ends, 8:00 a.m.
March	30	Monday	Fall semester pre-registration begins
April	10	Friday	Fall semester pre-registration ends
April	16	Thursday	Easter recess begins, 5:30 p.m.
April	21	Tuesday	Easter recess ends, 8:00 a.m.
May	1	Friday	Last day to file P.H.E.A.A.
May	5	Tuesday	Last day of classes
May	5	Tuesday	Last day to drop a course
May	6	Wednesday	Reading Day
May	7	Thursday	Second semester exams begin
May	14	Thursday	Second semester exams end
May	17	Sunday	Baccalaureate service, 10:30 a.m.
May	17	Sunday	Commencement, 2:30 p.m.
May	26	Tuesday	Summer School begins, 9:00 a.m.
May	29-31	Fri.-Sun.	Alumni Weekend
June	6	Saturday	Freshman orientation
June	13	Saturday	Freshman orientation
August	20	Thursday	Summer school ends, 12:00 noon
August	27	Thursday	Faculty conference
August	29	Saturday	Freshman orientation
August	31	Monday	First Semester begins, 8:00 a.m.

*NOTE: These dates do not apply to health, physical education and recreation activities courses for non-majors. Deadlines for adding these courses are Jan. 23 and March 20, 1987. Deadlines for dropping without recording a failure are Feb. 11 and April 8, 1987.

Title IX of the Educational Amendments of 1972 is a Federal law designed to eliminate sex discrimination in educational programs and activities. The law provides that "no person in the United States shall, on the basis of sex, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any education programs or activity..."

Ursinus College complies with Section 504 of the Rehabilitation Act of 1973, as amended, which provides that "no otherwise qualified handicapped individual...shall, solely by reason of his handicap, be excluded from the participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving Federal financial assistance." Any person with a complaint regarding discrimination on the basis of sex or handicap is invited to communicate with Richard P. Richter, President of Ursinus College, who is Title IX Coordinator, Corson Hall, 489-4111, Ext. 2212.

Ursinus College complies fully with the "Family Educational Rights and Privacy Act of 1974." The guidelines adopted by the College and a copy of the Act are available for inspection in the Office of the Dean of the College during regular business hours.

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1. 732 Main Street Hall
2. Todd Hall
3. 702 Main Street Hall
4. Schaff Hall
5. Olevian Hall
6. 624 Main Street Hall
7. U.C.C. Conference Headquarters
8. Duryea Hall
9. Shreiner Hall

10. Hobson Hall
11. Fetterolf House
12. Super House
13. Trinity United Church of Christ
14. Maples Hall
15. 500 Main Street Hall
16. Isenberg Hall
17. Marjorie T Elliott House, President's Home

18. 777 Main Street Hall
19. Omwake Hall
20. Life Sciences Building
21. Pfahler Hall
22. Curtis Hall
23. Wilkinson Hall
24. Brodbeck Hall
25. Myrin Library
26. Bomberger Hall

27. Bookstore & English Department
28. College Union
29. Corson Hall
30. Studio Cottage
31. Modern Languages Building
32. Infirmary (or Student Health Center)
33. Maintenance Building
34. Stauffer Hall
35. Paisley Hall

36. Beardwood Hall
37. Wismer Hall
38. Reimert Complex
39. Hefferich Hall
40. Ritter Center
41. 944 Main Street
42. 942 Main Street
43. Musser Hall
44. Sturgis Hall

45. Keigwin Hall
46. 476 Main Street
47. 444 Main Street
48. 424/426 Main Street
49. Utility Gym
50. Baseball Diamond
51. Practice Field
52. Effie Brant Evans Hockey Field
53. Clamer Hall