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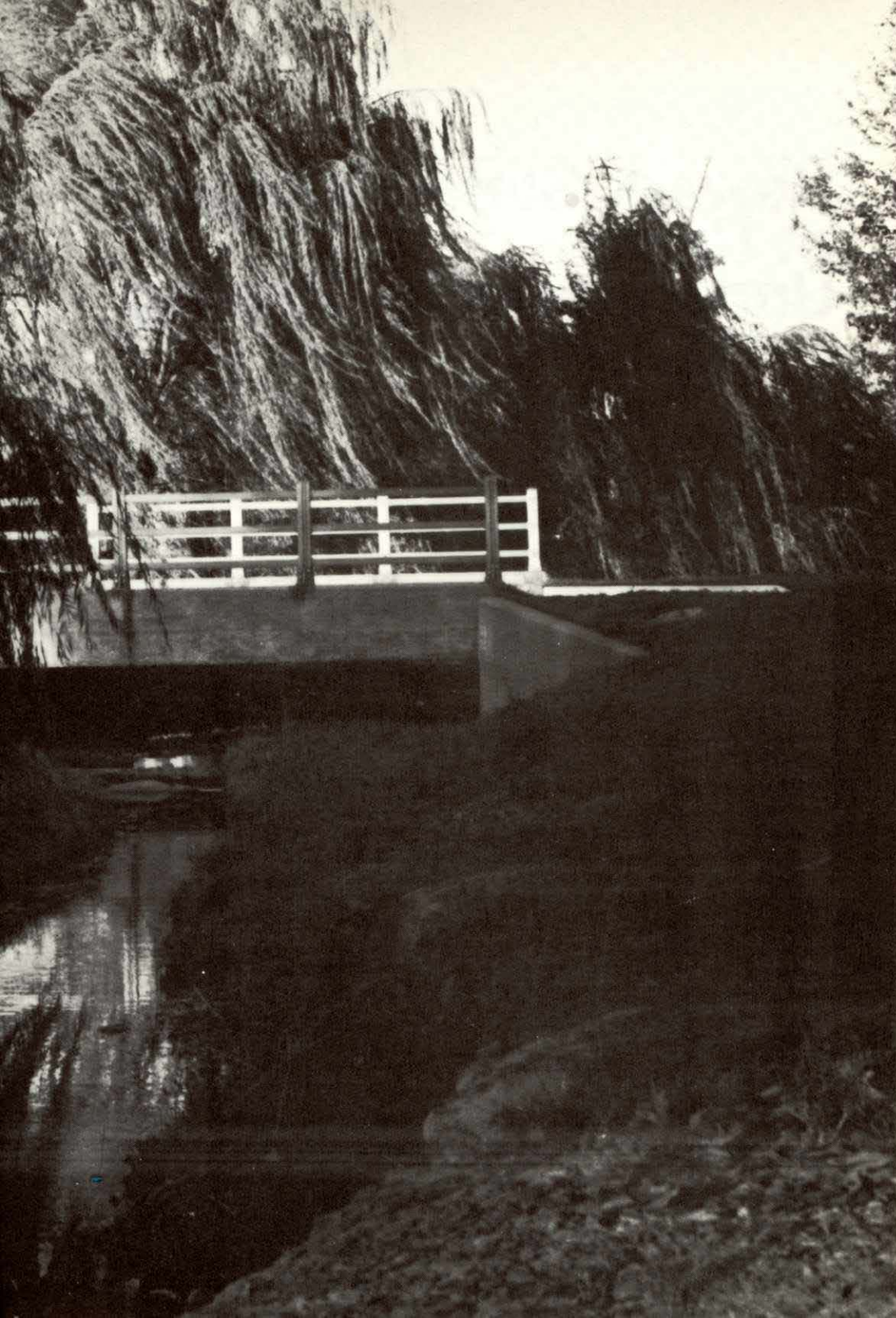
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Newark State College at Union Undergraduate Catalog 1973-1974



Department of College Publications
Division of College Development
Newark State College at Union
Union, New Jersey 07083

Newark State College at Union Undergraduate Catalog 1973-1974



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Newark State College at Union is a coeducational State supported institution conferring the degrees of Bachelor of Arts, Bachelor of Science and Master of Arts. Founded in 1855, it is one of the oldest institutions of higher learning in the State of New Jersey. Located in Union Township since 1958, the College occupies a 120 acre wooded site which has developed into a thriving and modern campus.

Newark State College at Union is a broad service institution. Recognizing this role, the College maintains a creative relationship of service and mutual cooperation with its neighboring communities. It is expanding both academically and physically in response to the interest of the community and the needs of its diverse student population.

Twenty-two distinct areas of study are offered in the arts, sciences, technologies and professional disciplines. There are a number of options in the form of individualized and specialized instruction. Further, the 13,000 full and part-time students now enrolled may attend class at times most suited to their lives by selecting their courses from an integrated day and evening schedule.

Four new apartment style residence halls, part of a multi-million dollar capital improvement program, now provide 1,200 men and women with a new dimension in student housing, complemented by a network of cultural, social and recreational services. Additional instructional and administrative buildings are also under construction, which, with the existing facilities, will comprise a comprehensive academic complex.

This combination of liberalized and innovative curricula, new and adaptable facilities, commitment to community service and readiness for growth and change defines the College and its future direction.

Accreditation and Affiliation

Newark State College is accredited by the Middle States Association of Colleges and Secondary Schools and many of its programs are approved by the National Council for Accreditation of Teacher Education. The College is licensed by the New Jersey State Department of Higher Education and retains memberships and affiliations which include the following:

National Commission on Accrediting
American Association of State Colleges and Universities
American Association of Colleges for Teacher Education
New Jersey Association of Colleges and Universities
American Association of University Women (corporate)
American Council on Education
College Entrance Examination Board
National School Public Relations Association
Association of College Registrars and Admissions Officers
Association for Field Services in Teacher Education
Association of University and Evening Colleges
Association for Institutional Research
American College Public Relations Association
World Future Society



Students at Newark State, instructed by an able and dedicated faculty, may major in the arts and sciences, education or applied disciplines. There are, therefore, alternatives in career preparation and preprofessional training which permit direct movement into business management, computer science, social work and industrial technology or lead to graduate work or to the study of medicine, dentistry and law.

Until recent years, the thrust of all undergraduate and graduate courses had been toward teacher preparation. While a change of emphasis has taken place, Newark State continues to train competent teachers and educational specialists.

The College has also structured admissions and academic programs appropriate to groups within the urban population now seeking in higher education a key to individual and community progress. Therefore, Afro-American and urban studies are offered in conjunction with the departmental majors and a bilingual (Spanish-English) program may be elected as a collateral to elementary education.

Further options will be added as the student body grows and as needs and interests broaden.

Graduate Studies

The Division of Graduate Studies offers programs and courses of advanced level and specialization which lead to the degree of Master of Arts, particular types of certification or personal enrichment.

A separate catalog, published for the Division and available on request, contains all information on graduate admissions and fees and describes in detail the following curricula:

- Administration and Supervision
- Audiology and Communications Science
- Early Childhood Education
- Education and the Behavioral Sciences
- Education and the Behavioral Sciences — Preprofessional Psychology
- Education and Contemporary Civilization
- Education and Contemporary Civilization — History
- Education and the Humanities
- Elementary Education — Advanced Specialization
- Fine Arts Education
- Learning Disabilities Specialist (Certification Program)
- Mathematics Education
- Reading Specialization
- School Psychology (Professional Diploma)
- Secondary Education
- Speech Pathology
- Teaching the Emotionally Disturbed and Socially Maladjusted
- Teaching the Mentally Retarded
- Student Personnel Services (Guidance and Counseling or School Social Work)

Summer Studies

For nearly 12 weeks following the end of spring semester the College conducts a series of academic sessions which bring some 8,000 students to Union and to the off-campus centers. Courses on the undergraduate and graduate level are offered, as are a number of special workshops and programs in, for example, theater arts, music (Kodally, Orff), welding technology and archeology.

All advisement and personnel services, the library, dormitories, student centers and other facilities are available to students throughout the summer.

A separate summer bulletin is published which outlines the schedule of courses, admission information and fees. It is available on request.

Off-Campus Centers

Courses are offered year-round primarily on the undergraduate level at a number of off-campus centers. They provide extended facilities for study beyond the Union Campus. The largest are the Neptune Center in Monmouth County and the Boonton Township Campus in Morris County.

Special Programs

The following programs were established to respond to particular needs of community, professional, business and industrial groups as well as the needs of individual students.

Center for Continuing Education The Center's programs are often devised at the request of individuals and organizations within the community and are carried out through credit and non-credit courses, workshops and conferences. Some provide professional development and cultural enrichment. Others are specifically planned for the purpose of community problem solving.

Adult Education Resources Center The emphasis is on basic education and language training for non-English speaking adults. The Resources Center is also involved in preparation for new careers and the training of teachers for adult education.

EVE (Education — Volunteer — Employment) EVE is a service for mature women. Special workshops are conducted periodically through which women may develop goals and determine the steps by which to reach them. The workshops serve to acquaint participants with educational, employment and service opportunities in the Central New Jersey area. Appointments may be made for individual vocational guidance interviews for which no fee is charged.



Newark State College is an important and active member of the greater community of Union County and Northern New Jersey. College services, facilities, growth and advancement all have significant social, intellectual, cultural and economic effects within the community. As the College advances as an institution, it is constantly increasing the variety of its services, which means a need for coordinated college-wide and community effects.

Through short and long range planning, commitment of resources and coordination of college and community relations, the Division of College Development directly aids and assists in this planned growth.

A diversified and important component of the College and its relations to the broader community, the Division of College Development consists of the offices of institutional research, alumni affairs, college publications, public relations and the college projects office which assists in the coordination of special projects involving the College and the community.

All administrative requests for grants, aid and support for programs both on and off campus are processed by the Division to complement existing resources and expand Newark State's potential for increased services to students, faculty, alumni and the citizens of the State.

The Institute for Community Services, established by the Board of Trustees, is administered by the Division and functions as the administrative vehicle for operations related to the United States Office of Education, the New Jersey Department of Community Affairs, the Department of Education and other major State and Federal agencies.

The Division of College Development shares in the administration of the Newark State College Development Fund which directly affects the growth of services at the College.

Through the Division of College Development, Newark State is an active participant in the Eastern Union County Chamber of Commerce, the Union Township Chamber of Commerce, the World Future Society, the National School Public Relations Association, the American College Public Relations Association, the American Alumni Council, the Union County Volunteer Action Center and the Newarkfields Project in addition to many other professional and civic associations.

The goal of the Division of College Development is the advancement of Newark State College through both college and community involvement.

Alumni

The relationship of the College and its alumni is based upon mutual interest, affection and service. Alumni continue to enjoy access to the physical plant of the College, the library, tennis courts, pool, gym and alumni lounge, and take advantage of placement and career guidance, the free lecture series and opportunities for group travel.

In turn, as individuals and in association, the alumni make a personal contribution on many levels to the College. Alumni sit on College committees and on the Board of Trustees. The Alumni Association, with its annual campaign of individual giving, provides student scholarships and library assistance and supports the College Development Fund and such special projects as display advertising, alumni-varsity athletic events, homecoming and campus beautification. The Association also publishes the Newark Stater several times a year to provide both alumni and the College with news of each other.

All Newark State students, upon receipt of their Bachelor's or Master's degree, automatically become general members of the Association. Their financial support of the Alumni Association ensures the benefits of active membership and reinforces their ties to the College and its present student body.



The College is located in Union Township, in the heart of urban New Jersey. However, the campus is quiet and spacious, spread over 120 acres of wooded land and cut through by the Trotter's Lane branch of the Elizabeth River. The lawns are broad, accented with benches and with outdoor sculpture created by fine arts students. New outdoor recreation areas are being created. Extensive landscaping now underway is adding further ease and beauty to the campus.

Access to the College is excellent with its proximity to major networks of transportation. This, in turn, makes the continuous cultural and intellectual interchange between the cities and the College possible. Parking on campus for visitors and commuting faculty and students is provided.

Opposite the campus is Liberty Hall, home of New Jersey's first governor, William Livingston. For 200 years, Liberty Hall has remained the residence of his descendants down to the present Kean family, from whom the college acquired its land in 1954.

Except for those of the original Kean estate, the campus buildings are modern and have all been constructed in the last fifteen years. A 21 million dollar expansion program is nearing completion, major components of which are science and administrative services buildings and dormitories which will house another 1,000 students.

The Kean Library — One of the original Kean estate buildings and a faithful replica of Norman architecture, panelled with oak from Sherwood Forest, Nottinghamshire, the traditional retreat of Robin Hood. Built by Senator Hamilton Fish Kean, it housed the senator's extensive private library and became a meeting place for politicians and statesmen.

Townsend Hall — Office of the President and administrative services. The original building has been extended by the Industrial Studies Wing and by Bruce Hall which contains classrooms and science laboratories.

College Center — Little Theatre, snack bar, lounges, Student Activities offices and meeting rooms.

Student Activities Building — Book Store, Health Services, lounges and offices.

D'Angola Gymnasium — Gymnasiums, swimming pool, dance studio. Named in memory of Joseph A. D'Angola head of the Health and Physical Education Department and Dean of Men, 1935-1956, and for Mrs. Anita B. D'Angola, head of Women's Physical Education, 1916-1956.

Campus School — Cluster of five buildings of classrooms and offices, housing the Department of Special Education and Institute of Child Study.

Theatre for the Performing Arts — 1000 seat semi-circular auditorium, practice rooms, reception hall.

Nancy Thompson Library — 700 seating stations from conference rooms to individual and research study carrels, Curriculum Materials Room, Audio Visual Services, extensive book collections, periodicals, microfilm. Named for Miss Nancy Thompson, the chief librarian from 1914-1957.

Willis Hall — Named for Dr. William Spader Willis, chief administrator from 1897-1928. Contains classrooms, computer center, departmental offices.

Downs Hall — Named for Dr. Martha Downs, Chairman of the Mathematics Department from 1921-1955. Contains student and faculty dining rooms and lounges.

Whiteman Hall — Residence for women. Named for Harriet E. Whiteman, Dean Emeritus.

Dougall Hall — Residence for men. Named for John B. Dougall, President of the College from 1944-1950.

Lenore Vaughn-Eames Hall — Workshop and exhibit space for the fine and theatre arts, studios and classrooms. Named for an alumna and member of the faculty from 1922-1960.





Student Life

Through a comprehensive program of activities and services, Newark State College at Union offers its students excellent opportunities for personal development and creative and responsible participation in the community.

Inquiry, dialogue and diversity are encouraged through special clubs and publications, athletic, social and cultural activities, student government and, significantly, college governance. The various levels on which faculty, administration and students meet and share in the process of design and decision for the College produces relationships which range from teacher-advisor to working associates and friends. Together they operate under a bill of rights and responsibilities, mutually conceived and accepted.

Supportive student services conducted under the auspices of the Office of the Dean of Students by a dedicated professional staff are available to the student body in response to needs for personal counseling and guidance, housing, health care, financial aid and student activities in general.

A Student Handbook is published yearly to provide a comprehensive guide to the student on all opportunities which exist on the campus.

All this means that the student can draw on all the resources of the College; that he can pursue quite individually that which may enlarge his world and, in turn, contribute to the making of the College.



Orientation

Orientation period precedes the opening of fall classes. Administrators and upperclassmen conduct a full schedule of informational meetings, campus tours, discussions, social events and whatever other programming they feel will contribute to the ease of the new student's introduction to the college experience.

The Student Centers

The complex of student activities facilities, the College Center and the neighboring Student Services Building, compose the hub of college life and provide the informal and friendly atmosphere in which students and faculty can mingle, relax and carry out business. The attraction may be coke or coffee, a light lunch, a specially scheduled program or an organization meeting.

The College Center provides lounges, meeting rooms, the offices of student organization and student publications, the professional student activities offices, the Little Theatre, snack bar and the Information and Services desk.

The Student Services Building also houses a student activities office as well as the Book Store, health services and the Equal Educational Opportunities Program. There are lounges, game rooms and listening, browsing and T.V. areas.

Student Organization

Every student is a member of Student Organization. Elected representatives from each class and officers elected by the student body as a whole comprise the Student Council which governs the Organization, meets regularly and takes action on issues of student concern. Student Org sponsors a number of projects including scholarships for foreign students at Newark State and an encounter program which emphasizes the human relations aspect of leadership. It also sponsors SCATE — the Student Committee for Advancement through Education which enlists faculty and students as tutors to work on a one to one basis with children in Newark and Elizabeth public schools.

The College Center Board is a standing committee of Student Organization. It manages the student centers and their related activities and initiates the cultural, recreational and social programs of the College. This is a cooperative venture. It is shared by the professional student activities staff which is prepared to advise and assist and which endeavors, wherever possible, to enable innovations to take place.





Clubs and Organizations

New groups have formed over the years as students have sought companions in the pursuit of special interests. There are clubs which cater to politics, religion, the human concern, sports, social events, recreation, fine arts, theatre arts and dance.

There are eighteen locally affiliated fraternities and sororities which serve a social function, engage in charitable work and are concerned with scholarship, character building and service to the College. In addition, there is a national service group for college and university men whose cardinal principles are leadership, friendship and service. There is also a statewide association of veterans in New Jersey colleges which exists to familiarize veterans with scholastic life and to discuss current and pending legislation affecting veterans.

Social Programs Many organizations and committees sponsor formal and informal mixers and teas where students can enjoy old friends and meet new ones. Among the outstanding social events each year are the four class dances and the Inter Fraternity-Sorority semi-formal.

Publications

There are a number of student publications and these run the gamut of form and opinion.

Independent A weekly newspaper, the *Independent* reports news items on the campus, local, state and national levels and is a platform for student opinion.

Basbu A bimonthly publication, *Basbu* expresses various modes of contemporary feeling and thought with particular emphasis on Black and Third World feeling. Poetry, essays, news items and criticism are featured.

Dana Review A twice-yearly literary review, *Dana* brings together the creative prose, poetry and art work of Newark State students.

Memorabilia The Newark State yearbook, *Memorabilia* presents a gallery of graduating seniors together with the faculty and administration of the college. In addition it provides a retrospective in words and pictures of the outstanding events of the year.

Cultural Programs

The cultural program brings to the campus a wealth of professional talent and intellect and includes performances by the various musical and theatrical groups of the College. Blues, rock, folk, classical music and dance concerts, art exhibits, films and lectures by distinguished guests are scheduled throughout the year.

Athletics

The College athletic program is varied and geared to engage the largest possible number of students who enjoy competition, recreation and physical fitness.

Newark State is a member of the National Collegiate Athletic Association and the Eastern College Athletic Association. The men compete in the New Jersey State College Athletic Conference in football, soccer, basketball, golf, tennis and baseball. Varsity teams are also fielded in lacrosse and bowling. Cross country and wrestling will soon be added to our growing program.

The recreation program for men includes intramural competition in football, basketball, volleyball, softball, cross country, badminton and wrestling. Free play, outdoor activities, swimming, weightlifting and physical fitness are also planned and supervised for the students with special emphasis on programs for our resident students.

Similarly there is inter-collegiate competition for women in field hockey, softball, gymnastics, basketball, tennis and swimming. The women are members of the Athletic Recreation Federation of College Women and the Association of Women's Intercollegiate Athletics.

Futher information can be obtained by contacting the Director of Athletics.



Counseling

The Counseling Center is located in the East Room of the College Center. It functions as a ready resource to students for individual counseling and guidance, group therapy and psychological testing. The door is open day or evening so that the student, without an appointment, may discuss with a counseling psychologist any matter of personal concern. The assistance of a consulting psychiatrist is also available, but by appointment only.

Financial Aid

Detailed information on scholarships, grants, awards, loans and part-time employment opportunities may be found in the Financial Aid section of the catalog.

Health Services

The College Health Service, located in the Student Services Building and administered by physicians and nurses, provides first aid and emergency treatment; short-term medical and psychiatric treatment; psychiatric consultation; health information and referral; allergy immunizations for resident students; medical counseling for a variety of health problems; leaves of absence for medical reasons; physical examinations; intercollegiate sports clearance; vision and hearing tests at students' request. The office has available, information and forms for student athletic insurance and student accident and health insurance.

There is no cost to students for service given by College medical personnel. Students absorb all expenses for treatment administered by private physicians, local hospitals, and other health agencies. Health insurance is compulsory for all resident students and is highly recommended to all commuting students as well. A college group health plan may be elected at nominal fee prior to each semester. See "Student Health Insurance" in the Fees and Expenses section of this catalog.

Students requiring special services due to temporary or permanent physical handicaps may apply to Health Services for elevator keys and special parking permits. Ramps are situated at the entrance of all buildings to accommodate students confined to wheelchairs.

Housing

College Apartments "An apartment with the campus at your doorstep" is the setting for those students who will reside at Newark State's newly constructed midrise apartment complex. Unlike the traditional dormitory style, these units feature 244 two bedroom apartments and 20 one bedroom apartments, each with private bath and modern science kitchen facilities. Each apartment is attractively furnished, completely carpeted and centrally air conditioned. Separate thermostats, television hookups and telephone service are available. Laundry facilities are also included on each floor.

The apartment complex provides accommodations for approximately 1,000 men and women and offers various life styles from separate residences to coed living in which men and women occupy the same building but are separated by apartment or by floor. Married students may apply for residency, but must submit a copy of their marriage certificate. Also, arrangements may be made for year round living as opposed to a 9 month contract.

All the apartments will be represented by a governing association comprised of all residents. Through elected officers and with the counsel of professional residence staff, this association will be concerned with all areas of student living.

Campus facilities will be open for extended use by the residence students including library, health services, game rooms, gymnasiums and snack bars. Also, a full calendar of social and cultural events, theater, performing arts, movies and off campus activities is planned.

Students are advised to contact the Director of Housing for housing costs and other information.

Off-Campus Housing Any full time student may register for off-campus housing with the Office of the Director of Housing, which maintains a complete listing service and will guide students in locating adequate housing in the community.



Academic Standards and Procedures





Within this catalog are the academic programs, standards and procedures which obtain for students matriculating at Newark State in the academic year for which this catalog is published. The College will provide the student with the programs stated herein. However, because Newark State wishes to be consistent with the needs of the times, program additions and modifications may take place.

Prospective students may use this catalog merely as a source of information. After admission to the College, students will rely on the catalog current at the time of matriculation for all degree requirements.

The Course of Study

The course of study at Newark State College is designed to bring to students the essential values of liberal education — a breadth of understanding, a depth of knowledge in chosen fields of learning and a large measure of freedom in determining what they will study and the direction of their education.

General education, or the breadth component of the curriculum, provides students with experiences in major areas of learning which will acquaint them with the diversity of man's thought, provide them with disciplined ways of knowing, and suggest the interdisciplinary and complex nature of the real world.

The component of depth, represented by the concentration or specialization requirement, enables students to acquire mastery in a subject discipline. This component is acquired through a number of professional and applied disciplines.

Students have freedom of choice in all components of their education at Newark State College and, generally speaking, one third of their program is intended to provide the opportunity to elect study in courses that seem appropriate and promise to add to educational development.

Academic Planning

The philosophy of the College places advisement responsibility on the total professional staff. Matters which relate to the declared major are handled by the major department. Matters which relate to general education are handled by the Office of Academic Planning. Students seeking advisement may consult either this Office or their academic departments.

Career Planning and Placement

The Office of Career Planning and Placement provides a confidential career counseling and placement service for undergraduates, seniors and alumni. Seniors are assisted in locating suitable positions in teaching, industry and government through on-campus interviews and direct referrals. In addition, the Office assists students in the techniques of securing a job — the proper conduct of interviews, the writing of applications and the preparation of qualification records.

The Office maintains a comprehensive folder of personal data and references which, with the permission of the student or alumnus, is sent to all interested employers.

Part-time and undergraduate summer employment is arranged through the Office of Financial Aid.

State Teaching Certificates

Teaching certificates are granted by the State to students upon graduation from the College, provided that all certification requirements have been met. Each certificate entitles the holder to teach in the grades and subjects included in the curriculum in which he has been prepared.

Application for Degree

Degree applications must be filed with the Registrar's Office no later than the first Friday of November in the academic year for which graduation is planned. If the student applies for two majors, he must designate one as the primary major and the other as the secondary. Applications are forwarded, together with a transcript of the academic record, to each student with 90 earned hours at the end of the spring semester and to other students upon request.

Awarding of Degrees

Degrees are awarded each year at the end of the fall, spring and summer semesters.



The Bachelor of Arts and Bachelor of Science degrees are conferred by the authority of the College Board of Trustees. To qualify, a student must be fully matriculated in a major program of the College, must complete a minimum of 32 credits at Newark State, must fulfill at least one half of his department's requirements at Newark State College and must have earned a minimum of 124 semester hours of credit. Certain programs of the College have greater semester hour requirements. In such cases, the requirements are expressed in the program descriptions which are located in this catalog within the academic departments or the Interdisciplinary section.

Structure of an Academic Program

	semester hours
GENERAL EDUCATION REQUIREMENTS	(minimum) 36
Required Course	3
Courses Within Clusters	33
MAJOR REQUIREMENTS	(minimum) 30
Required Courses	
Major Electives	
ELECTIVES (see page)	58
<i>The balance of credits needed for graduation</i>	
Total (minimum)	124

FURTHER REQUIREMENTS

Three quarters of all work beyond the general education requirements must be selected from 3000 to 4000 level courses.

No course prescribed as a major department requirement and completed at a grade lower than "C" will be counted toward the fulfillment of that requirement.

No course can fulfill both a major and a general education requirement for a degree.

No more than 40 semester hours in the major field will count toward the total credits for graduation.

Degree requirements must be completed within 10 years from the date of matriculation. Extension of time may be considered by a review committee upon written request by the student.

A 2.0 cumulative grade point average is required for graduation.

General Education Requirements

semester hours

Required Course

Eng. 1000 Composition I

(May be waived by examination. Students must satisfy this requirement with earned credit at the level of "C" or better.)

3

Courses Within Clusters

Semester hours required for each cluster are designated as minimum requirements. When the minimum is exceeded, the balance will be considered elective credit.

33

In selecting courses to fulfill these requirements, students are advised to read course descriptions carefully and to determine whether listed prerequisites, if any, have been met.

I HUMANITIES

12

Select from at least three of the five areas:

English

Fine Arts

Foreign Languages (courses at or above the 2000 level)

Music

Philosophy

II SCIENCES AND MATHEMATICS

7

Select from any of the four areas:

Biological Sciences

Chemistry and Physics

Earth and Planetary Environments

Mathematics and Computer Science

III SOCIAL AND BEHAVIORAL SCIENCES AND HISTORY

12

Select from at least three of the five areas:

Economics, Geography and Management Science

History

Political Science

Psychology

Sociology, Anthropology and Social Work

IV HEALTH DISCIPLINES

2

Select from either area:

Health Education

Physical Education

36

Selection of an Academic Program

Many of the professional programs at Newark State have extensive requirements and systems of prerequisite course work. The student is therefore encouraged to select an academic program as early as possible. In other programs with fewer prescribed courses and greater flexibility in choice of electives, the major may be selected as late as the spring of the sophomore year. Should the student desire, however, to pursue a second major, the choice must be made early, for fulfilling the requirement for two majors will necessitate careful planning of the entire curriculum.

Declaration of Majors(s) In order to declare a major, the student must apply formally to the academic department which offers the major. Upon acceptance into the major and with advice and approval of the department, a course of study may be planned to accommodate intellectual and professional needs. This procedure applies to a second major as well.

Use of the Free Electives After the student has arranged to fulfill general education and major department requirements, the remainder of the program may then be completed with free electives, chosen with department advisement. Electives may be used to develop a second major, a minor, or collateral program, acquire certain forms of certification, broaden knowledge or serve a variety of other educational interests. Choice of free electives is subject to the restriction that no more than 15 semester hours may be chosen from the courses offered by a single department, unless the student is fulfilling requirements in a second major, a minor or other program in which he or she has been accepted.

Change of Academic Program

The student who wishes to change his major should first contact the Office of Academic Planning and then inform the department concerned and apply to the new department.

Classification of Students

Students attend Newark State either on a full-time or part-time basis. Status is defined as follows:

Matriculated — those who have been accepted for admission and are enrolled in a program leading to a degree. Matriculated student status is available on both a full-time and part-time basis.

Prematriculated — those who are following a prescribed program leading to matriculation. Prematriculated student status is only available on a part-time basis and for a maximum enrollment of 30 attempted credits.

Work Load Full-time students must carry a minimum of 12 credits each semester with a maximum load of 18 credits. Part-time students may carry a maximum of 11 credits each semester.

Transfer Credit

Newark State grants transfer credit for courses taken at accredited colleges and universities. Should a Newark State student wish to take a course at another institution, advance written approval of the Registrar is required. Transfer courses are not calculated in the grade-point average.

Advanced Placement

Newark State College will grant degree credit and appropriate advance standing to students who have successfully completed Advanced Placement courses in high school and who have passed the Advanced Placement examination of the College Entrance Examination Board with a grade of three (3) or higher.

If the Advanced Placement course can be equated with a course offered in the College, degree credit equivalent to two semesters work in that course will be granted. If the Advanced Placement course cannot be equated with a course offered in the College, degree credit of six semester hours will be granted. There will be one exception to this policy: the Advanced Placement course "Latin 4" will be granted only three semester-hours credit.

Advanced Placement credit will be recognized as fulfilling general education requirements where applicable and will be treated as ungraded, transfer credit.

College Level Examination Program

The College Level Examination Program is designed to test and recognize the knowledge gained by individuals in non-traditional ways. Newark State College will accept up to 30 credits for the general examinations when a score in the twenty-fifth percentile or better is earned. Up to 15 credits will be accepted for the subject examinations with scores in the 50th percentile.

Those interested should apply to the Office of Academic Administrative Services before applying for the examinations or having the results of the examinations sent to the College. Applicants must be fully matriculated students or be candidates for admission to Newark State College.

Registration

Students should consult the College Calendar for all registration dates.

Priority in registration is given according to the number of hours earned toward the degree. Students who fail to avail themselves of advance registration privileges lose priority and are registered on a space available basis during late registration. Incoming freshman and transfer students are advised on registration with the materials that accompany acceptance by the College.



Class Attendance

Class attendance is optional for all students, subject to the following limitations:

Students are obligated to be present for announced quizzes and examinations. Students who are absent from announced quizzes and/or examinations without substantial excuse (as determined by the professor) shall be subject to failure.

Absence from laboratory or studio sessions shall be by prior agreement with the instructor.

Students are reminded that absence from class neither relieves them of responsibility for course requirements nor absolves them from mastering the subject matter dealt with in class.

Academic Honors

Encouragement for superior work is provided through the announcement of the Dean's List. Candidacy for the Dean's List is determined on the basis of a minimum 3.45 yearly grade-point average based upon 24 or more semester hours of work.

Students graduating with cumulative grade-point averages of 3.45 or better who have completed a minimum of 45 semester hours at the end of the first semester of their senior year are recognized as honor students with the following designations:

Average of 3.45 — 3.64 *Cum laude*

Average of 3.65 — 3.84 *Magna cum laude*

Average of 3.85 — 4.00 *Summa cum laude*

Honors categories achieved by students at the end of the second semester of the senior year will be included in all permanent records.

Academic achievement may also be recognized by election during the junior or senior year to Kappa Delta Pi or to Lambda Alpha Sigma Honor Society.

Kappa Delta Pi — Delta Rho Chapter — is an honor society in education open to ranking members of the junior and senior classes. Alumni of the College may also become eligible for membership subsequent to graduation, upon meeting the requirements of the society. The purpose of the society is to promote scholarly attainment and professional leadership in education. Delta Rho Chapter was established at the College in 1938.

Lambda Alpha Sigma was organized in January of 1970 to recognize and promote outstanding scholarship. Its membership is drawn from junior and senior students in the arts and science curricula who have achieved high academic standing.

Grade-Point Average

Comprehensive evaluation of the student's academic standing is indicated by grade-point average. The grade-point average is determined by dividing the total grade-points earned by the total number of semester hours attempted. The numerical equivalents for determining grade-point average follow:

A-4; B-3; C-2; D-1; F-0.

The cumulative average is determined only on courses taken at Newark State College.

Academic Standing

The academic standing of a student in every subject is reported at the end of each semester by a letter grade.

Credit is granted for the following:

A — Excellent

B — Good

C — Fair

D — Poor

P — Passing

No credit is granted for the following:

F — Failure

U — Failure

Inc — Incomplete Work

WD — Withdrawn

Student teaching is graded as "Pass" or "Fail".

Credits for student teaching are not used in computing a student's cumulative grade-point average.

PASS/FAIL

A matriculated student in good academic standing who has earned at least 30 semester hours of credit may, at any time before graduation, select a maximum of six courses from free electives to be taken on a *Pass/Fail* basis. Academic credit will be granted only for courses where the earned grade is "P." The cumulative grade-point average is not affected by work done on a *Pass/Fail* basis. A grade of "P" will be interpreted as achievement at the level of "C" or better. A grade of "U" will represent failure.

The *Pass/Fail* option must be declared at the time of registration and cannot be changed once declared.

INCOMPLETE

A grade *incomplete*, "Inc," may be reported for a student who has carried a course with passing grade until the end of the semester and then because of illness or other unusual and substantiated cause has been unable to take or complete the final examination or to complete some limited amount of assigned work. An *incomplete* must be removed by the last day of the semester following that during which it was reported. Any *incomplete* not removed at the end of this period automatically becomes an "F."

Leave of Absence

The following provisions apply to full-and part-time students in good standing. Good standing is defined as follows:

cumulative grade-point average at completion of semester prior to leave of absence has met minimum academic requirements of the College;

all financial and other obligations to the College (e.g., those due to the Business Office, Parking Secretary, Library) have been met in full; no disciplinary probation is in effect.

Such students who find it necessary or advisable to leave the College temporarily because of circumstances involving physical or emotional health, military obligations, study abroad or matters of personal priority may do so by taking a leave of absence and should consult the office of the Dean of Students.

Students who begin a leave of absence after a semester has begun are not eligible for resumption of study in the following semester unless special authorization is arranged with the Office of the Dean of Students.

The ordinary length of a leave of absence is one full semester. In unusual circumstances the Dean may approve a renewal of leave of absence. Renewal is effected by the payment of a \$5.00 continuing registration fee, due to the Business Office, prior to the opening of the semester. Students who neither return to the College through regular registration nor renew leaves of absence through the Dean of Students will automatically be considered to have withdrawn.

The grades of students who go on leave of absence after beginning semester course work are not computed into cumulative grade-point averages.

RE-ENTRY

A leave of absence provides for re-entry into the College without the need to apply for readmission. Students re-entering the College from leave of absence are responsible for registering for a course of study during the regularly scheduled registration periods provided by the Registrar's Office. Resumption of study at the College requires that notification of intent to return be given by the student to the Registrar no later than two weeks prior to the beginning of regular registration. Upon re-entry the student is subject to current curricular requirements.

Withdrawal

Students wishing to withdraw from the College should complete appropriate forms in the Registrar's Office.

Students withdrawing before completion of a semester may do so no later than the twelfth week so that instructors may assign withdrawal grades. These grades are not counted as part of the cumulative grade-point average. Students withdrawing at any time later than the twelfth week are subject to the regular system of earned grades.

READMISSION AFTER WITHDRAWAL

Students withdrawing from the College are not eligible for readmission for the subsequent semester unless special authorization is arranged with the Office of the Dean of Students prior to withdrawal. Once withdrawal is effected, all applications for readmission to the College — including those approved for early processing as stated above — must be filed in the Office of Admissions.

In no case does readmission to the College imply or constitute readmission to a specific academic program within the College. A student upon readmission will be subject to current College curriculum requirements.

Probation and Dismissal

Students earning a cumulative grade-point average of less than 2.00 shall be placed on probation. Any student earning a cumulative average which would place him on probation for the third time shall be dismissed from the College.

All students earning a cumulative grade-point average of less than 1.6 for the first 30 semester hours or less attempted, or less than 1.8 when more than 30 hours have been attempted, are subject to dismissal and shall be notified accordingly. Transfer students must satisfy the required minimum levels of academic achievement according to the total of their academic credits earned at Newark State and the previous college(s).

READMISSION AFTER DISMISSAL

Students dismissed from the College may apply for readmission for the semester that begins no sooner than one semester from the date of dismissal. Some students whose cumulative grade-point average is less than the minimum required by matriculation may be given the opportunity to enroll as special students for up to 16 semester hours of credit, with advisement, in order to raise their cumulative grade-point average to the minimum level permissible for matriculation.

Readmission shall be determined in the light of the original conditions of dismissal and it is understood that there may be instances wherein no reconsideration is warranted. Students seeking readmission should file an application with the Admissions Office. Forms are available from the Admissions Office and must be accompanied by a \$10.00 application fee.

Applicants are reminded to file as early as possible in order to avoid scheduling problems and possible postponement of readmission to the next semester.

It is understood that a student upon readmission will be subject to current College curriculum requirements.



Academic Programs

General

Bio. 1000 Principles of Biology (4) Staff
The course introduces the student to the nature of living forms, their interdependencies, and their adjustments to their physical environment. The fundamentals of structure and function dealt with in such primary processes as respiration, digestion, circulation, excretion, the control systems, reproduction, and heredity and variation of biological form through time. (3 hr. lec./2 hr. lab.)

Bio. 2001 Social Implications of Biology (3) Linden
Consideration of the problems generated by the discoveries in biology for man and society; biological factors of race and races and their social implications; problems due to man's persistence in overpopulation. Not open to biology majors for credit.

Molecular

Bio. 4105 Essentials of Biochemistry (4) Staff
A brief course in the chemistry of biologically important compounds. (3 hr. lec./3 hr. lab.)
Prerequisites: Chem. 1083-1084 and Bio. 2200, or permission of the instructor.

Cellular

Bio. 2200 Cell Biology (4) Hayat
The cell as the unit of structure and function of organisms. Emphasis is placed on molecular organization, form and function of cell organelles and cell specialization.
Prerequisite: Bio. 1000, or permission of the instructor (3 hr. lec./3 hr. lab.)

Bio. 4225 Cell Physiology (4) Staff
The nature and function of cell components and their relationships in cell processes. A selection of microbial, animal and plant cell types are used to illustrate common principles. (3 hr. lec./3 hr. lab.)
Prerequisite: Bio. 4105 or permission of the instructor.

Bio. 4245 Radiation Biology (4) Staff
The fundamentals of radiation-biology and its effects on macromolecules, the cell, the systems and the organism. (3 hr. lec./3 hr. lab.)
Prerequisites: one year of biology, physics, chemistry and mathematics (organic and biochemistry preferred) or permission of the instructor.

Microbiology

Bio. 3305 Principles of Microbiology (3) Del Vecchio
A survey of micro-organisms with emphasis on the protozoa, bacteria, algae and fungi of economic importance. Morphology, physiology and methods of culture and identification of common and representative forms are studied as they relate to human welfare.
Prerequisite: Bio. 2200, or permission of the instructor. (2 hr. lec./3 hr. lab.)

Bio. 4325 Applied Microbiology (3) Del Vecchio
Taxonomy of bacteria and other selected micro-organisms; the importance of micro-organisms in industry, food preservation, water analysis and soils. Cause and control of communicable diseases included. (2 hr. lec./3 hr. lab.)
Prerequisite: Bio. 3305 or permission of the instructor.

Organisms — Animal

Bio. 2402 Principles of Human Physiology and Anatomy (4) Staff
The physiology of the body processes and the related anatomical and histological studies. Consideration is given to the structure and function of the organ systems with emphasis being placed on the physiological processes. (3 hr. lec./3 hr. lab.)
Prerequisite: Bio. 1000 or permission of instructor.

Bio. 2403-2404 Human Physiology and Anatomy I and II (4, 4) Smith
An integrated concept of physiological processes of mammals starting with macromolecular interactions at the cellular level through to biochemical events leading to structure and function of systems and their interdependence. Laboratories are designed to study microscopic and macroscopic structure as well as biochemical events leading to normal function. Credit cannot be given for both Bio. 2402 and Bio. 2403-2404. (3 hr. lec./3 hr. lab.)
Prerequisites: Bio. 1000 or permission of instructor. Bio. 2403 is prerequisite to 2404.

Bio. 3414 The Invertebrates-Form and Function (4) Madison, Virkar
Evolution of form and function in the animal kingdom. The course stresses the principles of morphology, physiology and embryology. (3 hr. lec./3 hr. lab.)
Prerequisites: Bio. 2200 or permission of the instructor.

Bio. 3425 The Vertebrates-Form and Function (4) Madison
A study of the evolution of the vertebrates using the principles of comparative morphology, physiology and embryology. (3 hr. lec./3 hr. lab.)
Prerequisites: Bio. 2200 or permission of the instructor.

Bio. 4455 Comparative and Experimental Embryology (4) Madison
Developmental processes in animals combining descriptive, theoretical and experimental approaches. (3 hr. Lec./3 hr. lab.)
Prerequisites: Bio. 3425 and all chemistry required by the Biology major, or permission of the instructor.

Bio. 4475 General and Comparative Physiology (4) Virkar
The general physiological principles underlying fundamental life processes, and a comparative study of the manifestation of these processes in the different groups of animals. Treatment of subject matter at the cellular as well as the organismic level. (3 hr. lec./3 hr. lab.)
Prerequisites: Bio. 3414 or 3425 and all chemistry and physics required by the biology major or permission of the instructor.

Organisms — Plant

Bio. 2500 Principles of Botany (4) Staff
A study of the structure, metabolism, development, reproduction, and evolution of plants. (3 hr. lec./3 hr. lab.)
Prerequisite: Bio. 1000 or equivalent or permission of the instructor.

Bio. 3513 Morphology and Evolution of the Plant Kingdom (4) Schumacher
A study of the taxonomic, structural, reproductive and evolutionary aspects of the plant kingdom. (3 hr. lec./3 hr. lab.)
Prerequisites: Bio. 2200 or permission of the instructor.

Bio. 3523 Anatomy and Physiology of Vascular Plants (4) Lewis
A detailed study of the anatomy and physiology of seed plants. (3 hr. lec./3 hr. lab.)
Prerequisite: Bio. 2200, or permission of the instructor.

Bio. 3535 Field Botany (3) Staff
Principles of field identification of local flora with emphasis on use and construction of keys. Two Saturday all day field trips scheduled. (2-150 min. periods)
Prerequisite: Bio. 2601 or 3523 or permission of the instructor.

Bio. 3555 Plants and Civilization (3)

Staff

Terrestrial plant communities of the world and how they relate to man and his economic development.

Prerequisite: 8 semester hours of biology or permission of instructor.

Bio. 3565 Marine Botany (4)

A detailed consideration of the functional morphology and evolution of marine plants. Analysis of adaptive radiation and phyletic interrelationships. Laboratory and field work designed to encourage individual investigations. Given by the New Jersey Marine Sciences Consortium at its field station.

Prerequisites: Eight hours of biology including one semester of botany or permission of the instructor.

Bio. 4575 Plant Physiology (4)

Lewis

A study of physiological mechanisms involved in the germination, growth, development, and reproduction of green plants, water relations, carbohydrate metabolism and translocation, photosynthesis, mineral nutrition, growth hormones, and growth and development.

Prerequisites: Bio. 2200 and 2500 or permission of instructor.

Community — Ecology

Bio. 2601 The Ecological Environment and Man (4)

Hennings, Ward

A study of biological communities found in field, forest, pond and stream; selected world biomes; distribution, classification, succession and adaptations of organisms; problems of population (including man), pollution, radiation, conservation and multiple use of natural resources. (3 hr. lec./3 hr. lab.)

Prerequisites: Bio. 1000, or permission of instructor.

Bio. 3614 Principles of Ecology (3)

Lewis, Mahoney

A study of factors affecting the distribution and abundance of organisms. Course requirements include several field trips and a term paper. (2 hr. lec./3 hr. lab.)

Prerequisite: Bio. 1000, or permission of the instructor.

Bio. 4625 Studies in Field Biology (1 to 4)

A field study of the flora and fauna within specific communities. Taxonomic and ecological procedures. Environmental factors and their impact on the communities examined. One semester hour credit given for each full week or three weekends in the field and the orientation and summary meetings. Additional fees may be collected to cover the cost of transportation.

Prerequisites: Bio. 3614 or permission of the instructor.

Bio. 4635 Principles of Limnology (3)

Hennings

The biotic and abiotic factors affecting organisms occupying fresh water environments. Course requirements include field trips to aquatic habitats. (2 hr. lec./3 hr. lab.)

Prerequisite: Bio. 1000, or permission of the instructor.

Bio. 4655 Vertebrate Animal Behavior (3)

Staff

Ways in which vertebrate animals adjust and interact with their environments. Physiological, ecological and evolutionary aspects of ethology are studied on a comparative basis. Case studies are used to illustrate structural determinants, acquired and learned constraints.

Prerequisite: Bio. 3614 or permission of the instructor.

Genetics

Bio. 3704 Principles of Genetics (3)

Linden

The Mendelian principles of heredity and the modern concept of the gene.

Prerequisite: Bio. 2200, or permission of the instructor. (2 hr. lec./3 hr. lab.)

Techniques and Others

Bio. 3815 Laboratory Techniques and Instrumentation-Biological Science (3)

Use of the various techniques involved in the collection, preparation and maintenance of materials used in the laboratory. (6 hr. lab.)

Prerequisite is 8 semester hours of biological laboratory science, or permission of the instructor.

Bio. 4835 Biostatistics (4)

Staff

Statistics as applied to biology, including descriptive statistics, sampling distributions, statistical inference-estimation and hypothesis testing, linear regression and correlation, multiple and partial regression and correlation, analysis of variance, covariance analysis and experimental design. Laboratory problems and computer utilization supplement lecture material.

Prerequisite: 8 sem. hours of biology or permission of the instructor.

Research and Seminar

Bio. 4905 Seminar in Biology (1)

Staff

A critical study of current topics in biology utilizing the original literature. The student prepares and presents a paper to the seminar group. Following the presentation, the speaker serves as moderator in a discussion of the subject.

Prerequisite: Bio. 2200, and permission of the instructor.

Bio. 4915 Special Topics in Biology (1 to 4)

Staff

Class work designed to provide an opportunity to study special topics in biology which are not studied in regular courses. Topics to be announced by the department. One semester hour of credit given for each 15 hours of class work.

Prerequisite: 16 semester hours of biology.

Bio. 4955 Introduction to Biological Research (3)

Staff

The philosophy, aims and methods of biological research are developed through lectures, discussions and the execution of a research project.

Prerequisite: Permission of the instructor.

Faculty: Blount, Cullmann (Chairman), Getzin, Leeds, Luther, Salisbury, Silano, Struyk

Major in Chemistry

This program is designed to prepare the student for graduate study in the various fields of chemistry, for teaching and for positions in related industries. Students who desire certification to teach chemistry should elect the Collateral Program in Secondary Education.

	semester hours
GENERAL EDUCATION REQUIREMENTS (see page 27)	36
Required Cognate Courses	7
<i>Within the Sciences and Mathematics Cluster:</i>	
Math. 2411 Calculus I	3
Phys. 2091 General Physics I	4
ADDITIONAL COGNATE COURSES	7
Math. 2412 Calculus II	3
Phys. 2091 General Physics II	4
MAJOR REQUIREMENTS	34
Chem. 1083-1084 General Chemistry I and II	8
Chem. 2181-2182 Organic Chemistry Lec. I and II	6
Chem. 2183-2184 Organic Chemistry Lab. I and II	4
Chem. 2283 Quantitative Analysis	4
Chem. 3381-3382 Physical Chemistry I and II	8
Chem. 3481 Inorganic Chemistry	4
ELECTIVES (see page 28)	47
	124

For students who plan advanced study in the field of chemistry, Chem. 2284 is required, as well as 2 semesters of advanced courses at the 4,000 level. German is recommended.

Biochemistry For students planning to specialize in biochemistry, at least two electives in biology are suggested with the consent of the faculty advisor. The two advanced electives may also be selected from upper level math, physics or earth science courses.

Major in Chemistry Preprofessional Option

The following program is designed for students planning to apply to medical or dental schools. Since many medical schools prefer a core of courses in the humanities, students are advised to consult the catalogs of medical schools to which they will apply and to select courses with departmental advisement which will insure meeting entrance requirements.

	semester hours
GENERAL EDUCATION REQUIREMENTS (see page 27)	36
Required Cognate Courses	7
<i>Within the Sciences and Mathematics Cluster:</i>	
Bio. 1000 Principles of Biology	4
Math. 2411 Calculus I	3
ADDITIONAL COGNATE COURSES	15
Bio. 2200 Cell Biology	4
Math. 2412 Calculus II	3
Phys. 2091-2092 General Physics I and II	8
MAJOR REQUIREMENTS	32
Chem. 1083-1084 General Chemistry	8
Chem. 2181-2182 Organic Chemistry Lecture I and II	6
Chem. 2185-2186 Brief Organic Chemistry Laboratory I and II	2
Chem. 3301 Principles of Physical Chemistry	4
Chem. 2283 Quantitative Analysis	4
Chem. 3681 Inorganic Chemistry	4
Bio. 4105 Biochemistry	4
ELECTIVES (see page 28)	32

Interdisciplinary Major in Medical Technology Students majoring in the Preprofessional Chemistry Option may apply for the clinical year in Medical Technology if they have met the prerequisites as outlined in that program.

Major in Chemistry-Physics

	semester hours
GENERAL EDUCATION REQUIREMENTS (see page 27)	36
Required Cognate Courses	7
<i>Within the Sciences and Mathematics Cluster:</i>	
Chem. 1083 Chemistry I	4
Math. 2411 Calculus I	3
ADDITIONAL COGNATE COURSES	7
Chem. 1084 Chemistry II	4
Math. 2412 Calculus II	3
MAJOR REQUIREMENTS	40
Required Courses	24
Phys. 2091-2092 General Physics I and II	8
Chem. 3381-3382 Physical Chemistry I and II	8
Phys. 4491 Thermodynamics and Heat	4
Phys. 4592 Modern Physics	4
Major Electives selected from upper division courses in the chemistry-physics area.	16
ELECTIVES (see page 28)	41
	124

It is recommended that students planning a chemistry-physics major take Chem. 1083-1084 and Phys. 2091-2092 in the freshman year and complete Math. 2411-2412 by the end of the sophomore year.

Collateral Program in Secondary Education Students who wish to teach chemistry or physics in secondary schools must complete the Collateral Program in Secondary Education for a physical science certification.

Chemistry — General

Chem. 1000 Principles of Chemistry (4)

A one-semester terminal course in the structure of matter, the laws that describe its transformations, and the theories that attempt to explain them. Involves symbols, formulas, equations, and computations in the study of chemical change, acids, bases, salts, solutions, and organic compounds. This course may not be submitted as a prerequisite for advanced chemistry courses or to meet the chemistry requirements of a liberal arts science major. (3 hr. lec./2 hr. lab.)

Chem. 1083 Chemistry I (4)

Meets the general education science requirements. A thorough discussion of the fundamental principles of chemistry such as atomic structure, bonding, solutions, chemical equilibrium, oxidation, reduction, and descriptive chemistry. Mathematical relationships and problem-solving are stressed. It is advisable that the student have competence in elementary algebra. No credit is granted for this course unless Chem. 1084 is also completed. (3 hr. lec./3 hr. lab.)

Chem. 1084 Chemistry II (4)

A continuation of Chem. 1083 which is prerequisite. (3 hr. lec./3 hr. lab.)

Organic

Chem. 2180 Principles of Organic Chemistry (4)

A terminal one semester course dealing with the principles involved in the elucidation of the structure of organic compounds and the nature of the reactions encountered in aliphatic and aromatic chemistry. Examples of the common functional groups. Industrial and medical applications. (2 hr. lec./3 hr. lab.)

Prerequisite: Chem. 1083-1084 or permission of the instructor.

Chem. 2181 Organic Chemistry Lecture I (3)

A first course in organic chemistry. The nature and reactions of organic compounds are studied via a functional group organization. Atomic and molecular orbital theory; aliphatic, aromatic, alicyclic; reaction mechanisms; resonance; stereoisomerism; conformational analysis; and free radicals. No credit is granted unless Chem. 2182 is also completed.

Prerequisites: Chem. 1083-1084. Corequisites: Chem. 2183 or 2185 or permission of the instructor.

Chem. 2182 Organic Chemistry Lecture II (3)

A continuation of Chem. 2181.

Prerequisite: Chem. 2181, (2183 or 2185) or permission of the instructor.

Corequisite: Chem. 2184 or 2186.

Chem. 2183 Organic Chemistry Laboratory I (2)

Reactions of organic compounds. Substances representative of the major classes of compounds are prepared, purified, and analyzed. A literature research is required. For chemistry majors and others wishing a more extensive laboratory experience than provided by Chem. 2185. (6 hr. lab.)

Corequisites: Chem. 2181 or permission of the instructor.

Chem. 2184 Organic Chemistry Laboratory II (2)

A continuation of Chem. 2183. The student completes the course designing a procedure in the preparation of an organic intermediate. (6 hr. lab.)

Corequisite: Chem. 2182 or permission of the instructor.

Chem. 2185 Brief Organic Chemistry Laboratory I (1)

Leeds

Representative compounds of a number of the major classes of organic compounds prepared on a macro scale. The techniques of purification of small amounts of material. To be taken by non-chemistry majors who wish to fulfill the requirements of graduate school in biology or for preprofessional courses such as pre-dental, pre-medical, or pre-nursing. (3 hr. lab.)

Corequisites: Chem. 2181 or permission of the instructor.

Chem. 2186 Brief Organic Chemistry Laboratory II (1)

Leeds, Salisbury

A continuation of Chem. 2185. (3 hr. lab.)

Corequisite: Chem. 2182 or permission of the instructor.

Chem. 3150 Spectrometric Identification of Organic Compounds (3)

Determination of structure of organic compounds by analysis of infrared, ultraviolet, nuclear magnetic resonance and mass spectra. Extensive use of published spectra of "unknowns."

Prerequisite: Chem. 2182.

Chem. 4181 Organic Chemistry Lecture III (3)

A continuation in depth of the study of organic compounds and syntheses from a mechanistic approach.

Prerequisite: Chem. 2182.

Chem. 4182 Advanced Organic Preparations (3)

A laboratory course designed to give the student a broader background in the synthesis of organic compounds.

Prerequisite: Chem. 2184.

Chem. 4183 Introduction to Physical Organic Chemistry (3)

The application of physical chemical principles to the study of organic compounds. An introduction to conformational analysis, molecular orbital theory and resonance concepts.

Prerequisites: Chem. 2182 and 3382.

Analytical

Chem. 2283 Quantitative Analysis (4)

Cullmann

The theory, calculations, and techniques of gravimetric, titrimetric and photometric methods of analysis. (2 hr. lec./6 hr. lab.)

Prerequisites: Chem. 1083-1084 or permission of the instructor.

Chem. 2284 Instrumental Methods of Chemical Analysis (3)

Luther

General applications of modern instruments to the detection, identification and estimation of chemical elements and compounds. Laboratory exercises in the use of a variety of instruments. (2 hr. lec./3 hr. lab.)

Prerequisite: Chem. 2283 or permission of the instructor.

Physical

Chem. 3301 Principles of Physical Chemistry (3)

A non-mathematical introduction to the theory and applications of physical chemistry. Topics include the heats of reaction of chemical systems and the structure of atoms and molecules. This course cannot be applied for credit to a major in chemistry or chemistry-physics.

Prerequisite: Chem. 1084 or permission of instructor.

Chem. 3381 Physical Chemistry I (4)

Getzin

The basic theories behind the behavior of matter discussed in great detail for deeper understanding of thermodynamics, kinetics, solutions, the states of matter, chemical equilibrium, and other topics. (3 hr. lec./3 hr. lab.)

Prerequisites: Chem. 1083, 1084 and Math. 2411-2412 or permission of the instructor.

Chem. 3382 Physical Chemistry II (4)

Getzin

A continuation of Chem. 3381, which is prerequisite.

Chem. 4381 Physical Chemistry III — Chemical Thermodynamics (3)

An advanced treatment of the laws of thermodynamics, and rigorous application to problems of chemical interest including heats of reaction, spontaneity of chemical reactions and phase changes.

Prerequisites: Chem. 3382 and Math. 3452 or permission of instructor.

Chem. 4382 Physical Chemistry IV — Quantum Chemistry (3)

Development of the mathematical and physical theory of Quantum Mechanics and application to the structure and properties of atoms and molecules. The Schroedinger Equation, Variation Theory and Perturbation Theory.

Prerequisites: Chem. 3382 and Math. 3452 or permission of instructor.

Inorganic

Chem. 3481 Inorganic Chemistry (4)

Luther

Periodicity and stereochemistry of the Main Group Elements and comparative group properties. Coordination chemistry of transition metals. Theories of bonding in transition metal complexes. Laboratory synthesis and the study of inorganic compounds using a variety of techniques. (3 hr. lec./3 hr. lab.)

Prerequisite: Chem. 2284 or permission of instructor.

Corequisite: Chem. 3382 or permission of instructor.

Seminars and Independent Research

Chem. 4901-4902 Independent Chemistry (2, 2)

Research problems in chemistry will be investigated. Problems will be outlined and supervised by a faculty member. Open to senior chemistry majors and honor juniors. Prerequisite: Approval of department chairman.

Chem. 4953 Seminar I (2)

The student is asked to pursue a problem of current interest. He prepares and presents his paper to a seminar group. Following the presentation, the speaker serves as moderator in a discussion of the subject.

Chem. 4954 Seminar II (2)

A continuation of Chem. 4053.

Students emphasizing a chemistry specialization may elect Bio. 4105 and Phys. 4491.

Physics — General

Phys. 1000 Principles of Contemporary Physics (4) Blount, Silano
A one-semester, conceptual approach to a study of man's physical world. Modern problems such as pollution and environmental control, energy resources, space flight and technology. Designed specifically for non-science majors. (3 hr. lec./3 hr. lab.)

Phys. 2000 Introduction to Modern Physics (4) Struyk
A one semester terminal course in modern physics limited to algebra, geometry and trigonometry. Topics include atomic and nuclear structure and behavior, quantum phenomena, lasers, x-ray, relativity. (3 hr. lec./3 hr. lab.)
Prerequisite: Phys. 1000 or 2092.

Phys. 2091 General Physics I (4) Staff
A broad course designed to contribute to a quantitative understanding of the fundamental laws and principles of physics. Areas include mechanics, heat and sound. An understanding of the fundamentals of calculus is urged. No credit is granted without Phys. 2092. (3 hr. lec./3 hr. lab.)
Prerequisite: Math. 1052-1053 its equivalent, or permission of the instructor.

Phys. 2092 General Physics II (4) Staff
A continuation of Phys. 2091 which is prerequisite. Light, magnetism, electricity, and atomic physics. (3 hr. lec./3 hr. lab.)

Mechanics

Phys. 3191 Mechanics (4) Silano, Blount
A rigorous approach to the problem of the statics and dynamics of particles and rigid bodies. (3 hr. lec./3 hr. lab.)
Prerequisite: Phys. 2092 and Math. 2411-2412 or permission of the instructor.

Phys. 3195 Fluid Mechanics (3) Blount
An introductory lecture course in the physics and applications of incompressible and compressible fluids, and of fluid power, dealing with the transmission, control, and storage of energy by means of a pressurized fluid in a closed system.
Prerequisites: Phys. 2091-2092 and Math. 2411-2412.

Optics

Phys. 3294 Optics (4) Struyk
An intermediate course designed for qualified students who desire an extensive knowledge of geometrical and physical optics and who seek a rigorous and comprehensive treatment of optics. (3 hr. lec./3 hr. lab.)
Prerequisites: Phys. 2091-2092 and Math. 2411-2412.

Electricity — Magnetism

Phys. 3392 Magnetism and Electricity (4) Silano
Theory of electrostatics, electromagnetics, d.c. and a.c. electrical and magnetic circuit analysis, electromagnetic radiation. Maxwell's equation. (3 hr. lec./3 hr. lab.)
Prerequisites: Phys. 2091-2092 and Math. 2411-2412, or permission of the instructor.

Phys. 3393 Electronics (4) Silano
Designed to provide the student with a background in the theory and application of electron tubes, solid state devices, and electronic circuits. Laboratory work directed toward the study and understanding of electronic circuits. (3 hr. lec./3 hr. lab.)
Prerequisites: Phys. 2091-2092 and Math. 2411-2412 or permission of instructor.

Thermodynamics

Phys. 4491 Thermodynamics and Heat (4) Blount
A detailed study of thermometry, calorimetry and transfer, and heat processes. Classical approach to thermodynamics and kinetic theory. (3 hr. lec./3 hr. lab.)
Prerequisites: Phys. 2091-2092 and Math. 2411 -2412 or permission of the instructor.

Modern Physics

Phys. 4592 Modern Physics (4) Struyk
A rigorous survey of atomic and nuclear physics, early experimentation, incompatibility of experimental findings and classical theory, and quantum and wave mechanics approaches to understanding modern physics. (3 hr. lec./3 hr. lab.)
Prerequisites: Phys. 2091-2092 and Math. 2411-2412, or permission of the instructor.

Phys. 4594 Quantum Mechanics (3) Struyk
This lecture course is an introduction to the physical and mathematical formulation of quantum mechanics. After a brief historical development, topics considered are the Schrodinger Equation and its application to problems involving the free particle, potential barriers, the linear harmonic oscillator, central force motion, and the hydrogen atom. Perturbation methods are introduced.
Prerequisites: Phys. 3191 and 4592, and Math. 4403, or permission of the instructor.

Phys. 4595 Solid State Physics (3) Staff
An introductory lecture course dealing with the phenomenological and theoretical aspects of solid state physics. Areas considered in depth include symmetry, crystal structure and the X-ray analysis of crystals followed by a detailed study of the thermal, optical, magnetic and dielectric properties of solids.
Prerequisites: Phys. 4592, or permission of the instructor.

Seminars

Phys. 4953 Physics Seminar I (2) Staff
In this course, the student is asked to pursue a problem of current interest. He prepares and presents his paper to a seminar group. Following the presentation, the speaker serves as moderator in a discussion of the subject.

Phys. 4954 Physics Seminar II (2) Staff
A continuation of Phys. 4053.

Science

Sci. 1101 Physical Science I (4) Staff
The fundamental areas of physics, chemistry, geology, and astronomy. Designed to give a broad view of the knowledge and insights that science has revealed about the material universe. Offered to non-science majors. No credit granted without Sci. 1102. (3 hr. lec./3 hr. lab.)

Sci. 1102 Physical Science II (4) Staff
A continuation of Sci. 1101, which is prerequisite.

Sci. 4052 History and Philosophy of Science (2) Staff
The course emphasizes existing interrelationships between cognitive patterns and scientific creations from man's early intellectual efforts on down through our contemporary period.

Sci. 4054 Laboratory Techniques and Instrumentation — Physical Science (2) Staff
Designed to prepare the student to use the various techniques involved in the collection, preparation, and maintenance of materials used in the laboratory. (4 hr. lab.)
Prerequisite: Eight hours of physical laboratory science, or permission of instructor.

Faculty: Andrews, Bush, Carmichael, Gold, Kleederman, Knapp, D. Leeds, Mayes, Mazurkiewicz (Chairman), Merlo, O'Meara, Putnam, E. Schwartz (Library Science Coordinator), Temkin, Walter, Welle (Reading Coordinator)

The Department of Communications Sciences, a composite of reading, audio-visual and library science programs, focuses its efforts on the study of the problems of and procedures for dealing with printed and non-print media used in acquiring and disseminating information. While storage and classification of printed material for use in information retrieval is included in its scope, the department's major emphasis is on those factors (learning, information theory, language characteristics, etc.) which inhibit or promote ease in decoding and comprehension of print.

Teacher-Librarian Major

Students who complete this program will be eligible for New Jersey certification as a teacher-librarian in grades K-12 or as a teacher in either the elementary area or the secondary subjects of English, mathematics, history and social sciences.

Recognizing the contribution of a broad subject matter background, this program incorporates liberal arts and professional education courses with required credits in library science.

Elementary Orientation

	semester hours
GENERAL EDUCATION REQUIREMENTS (see page 27)	36
Required Cognate Courses	9
Eng. 1900 Speech	3
Psy. 1000 General Psychology	3
Psy. 2100 Child Psychology	3
ADDITIONAL COGNATE COURSES	9
<i>Selected from Clusters I, II and/or III in General Education Requirements</i>	
MAJOR REQUIREMENTS	63
Required Courses	60
L.S. 2000 Introduction to School Library Services	3
L.S. 2010 Fundamentals of Cataloging and Classification	3
L.S. 3000 Basic Reference and Bibliographical Services I	3
L.S. 3010 Basic Reference and Bibliographical Services II	3
L.S. 4000 School Library Administration	3
L.S. 4010 Book Selection for Children and Young People	3
C.S. 3400 The Teaching of Reading in the Elementary School	3
C.S. 4400 Advanced Reading Techniques	3
C.S. 4700 Audio-Visual Media of Instruction	3
E.A.S. 3100 Elementary Curriculum and Methodology	3
E.A.S. 3110 English in the Elementary School	3
E.A.S. 3120 Mathematics in the Elementary School	3
E.A.S. 3130 Science in the Elementary School	3
E.A.S. 3900 Field Experience in the Elementary School	1
E.A.S. 4140 Social Studies in the Elementary School	3
E.A.S. 4900 Student Teaching	8
Ed. Psy. 3801 Educational Psychology	3
F.A. 3910 Art in Education or	
Mus. 2310 Elementary School Music Education	3
P.Ed. 3538 Health and Physical Education in the Elementary School	3
Major Elective one of the following:	3
E.A.S. 3711 Children's Literature in Education	
E.C. 3100 Children's Literature in Early Childhood Education	
Eng. 2500 Children's Literature	
ELECTIVES (see page 28)	20

Secondary Orientation

	semester hours
GENERAL EDUCATION REQUIREMENT (see page 27)	36
Required Cognate Courses	9
Eng. 1900 Speech	3
Psy. 1000 General Psychology	3
Psy. 2110 Psychology of Adolescence	3
ADDITIONAL COGNATE COURSES	9
<i>Selected from Clusters I, II and/or III in General Education Requirements</i>	
ACADEMIC MAJOR REQUIREMENTS	minimum 30
<i>See descriptions of majors in English, mathematics, history, economics and political science</i>	
TEACHER – LIBRARIAN REQUIREMENTS	41
Required Courses	38
L.S. 2000 Introduction to School Library Services	3
L.S. 2010 Fundamentals of Cataloging and Classification	3
L.S. 3000 Basic Reference and Bibliographical Services I	3
L.S. 3010 Basic Reference and Bibliographical Services II	3
L.S. 4000 School Library Administration	3
L.S. 4010 Book Selection for Children and Young People	3
C.S. 4700 Audio-Visual Media of Instruction	3
E.A.S. 4510 English in the Secondary School <i>or</i>	
E.A.S. 4521 Materials for Mathematics Instruction <i>or</i>	
E.A.S. 4540 Social Studies in the Secondary School	3
E.A.S. 4900 Student Teaching	8
Ed. Psy. 3801 Educational Psychology	3
One course in Foundations: E.P.S. 4010-4070	3
Major Elective one of the following:	3
E.A.S. 3711 Children's Literature in Education	
E.C. 3100 Children's Literature in Early Childhood Education	
Eng. 2500 Children's Literature	
Eng. 2505 Literature for the Adolescent	
ELECTIVES (see page 28)	12

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Reading Collateral Program

The program in reading is collateral to the program for the development of the elementary education teacher. Its purpose is to develop a resource person in the field of reading, a teacher trained as a master in the area. Application for initial admission to the program should be made in the sophomore year.

Prerequisite courses for formal admission to the program:

- C.S. 3400 The Teaching of Reading in the Elementary School (3)
- C.S. 4400 Advanced Reading Techniques (3)

	semester hours
Required Courses	9/10
C.S. 4402 Reading Disabilities	2
C.S. 4404 Practicum in Reading	2
C.S. 4405 Reading in Early Childhood Education <i>or</i>	2
C.S. 4406 The Teaching of Reading in the Secondary School	3
E.A.S. 3711 Children's Literature in Education <i>or</i>	
L.S. 4010 Book Selection for Children and Young People	3
Electives three courses selected from the following:	9
C.S. 4401 The Linguistic Approach to the Teaching of Reading	
C.S. 4405 Reading in Early Childhood Education <i>or</i>	
C.S. 4406 The Teaching of Reading in the Secondary School	
Eng. 2100 Introduction to Descriptive Linguistics	
Eng. 3110 Descriptive American-English Grammar	
Eng. 3615 Creative Drama	
Eng. 3625 Children's Theater	
Eng. 4100 Readings in Language	
E.A.S. 3710 Teaching English as a Second Language	
Ed. Psy. 3802 Educational Psychology of the Disadvantaged Urban Child	
Psy. 4200 Tests and Measurements	

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- 0000 Library Science
 0400 Reading
 0600 Remediation
 0700 Media and Technology

Library Science

- L.S. 2000 Introduction to School Library Service (3)** Schwartz
 The role of the school library: growth and development as an integral part of the educational process; its current function as an instructional materials center with collections of both book and audio-visual materials. Leadership role of the librarian as an educator and the school librarian's achievement of this position.
- L.S. 2010 (2100) Fundamentals of Cataloging and Classification (3)** Temkin
 Techniques in the organization of materials for ready use are presented with emphasis upon the Dewey Decimal System of Classification. Elementary instruction in the preparation of catalog cards, selection of subject headings, acquisition and use of printed catalog cards, and organization of the card catalog.
- L.S. 3000 (3201) Basic Reference and Bibliographical Services I (3)** Temkin
 Introduction and use of basic reference tools for the school library: encyclopedias, dictionaries, yearbooks, periodical indexing services, "ready" reference works, and other standard sources in the location of information.
- L.S. 3010 (3202) Basic Reference and Bibliographical Services II (3)** Temkin
 A continuation of L.S. 3000 which is prerequisite. Specialized reference works and various types of reference materials in many subject areas are studied. National and trade bibliography, bibliographic method and control, and actual procedures in the construction of bibliographies.
- L.S. 4000 School Library Administration (3)** Schwartz, Temkin
 Organization of both the service and instructional functions of the school library, interrelating all aspects of the previous library science offerings into one structural whole. Special attention to budgetary procedures, technical processes, library program — including instruction in the use of the library, publicity and exhibit techniques, preparation of library reports, relationship with students, faculty, and administration. Recent field experiences are used to guide the development of the above areas. L.S. 2000 is prerequisite.
- L.S. 4010 (4300) Book Selection for Children and Young People (3)** Schwartz
 Techniques in selection and evaluation of children's and young people's literature. Major emphasis upon individual acquaintance with a broad cross-section of available materials through extensive critical reading. Practice in the art of story telling and presentation of book talks. Selection and evaluation of non-print media.

Reading Education

- C.S. 1401 College Reading and Study Skills (3)** Andrews
 Developing reading and learning skills is programmed to increase efficiency in these areas. Skills include speed of comprehension, areas of comprehension, vocabulary and the study skills of concentration, note-taking, time-scheduling and test-organization. Recommended as an elective for those students who seek a strong developmental program in learning.
- C.S. 3400 The Teaching of Reading in the Elementary School (3)** Staff
 A detailed study of a productive reading program from its beginning through the eighth grade. Emphasis is on materials, methods, research results and modern trends.
- C.S. 3405 Children's Literature and Reading (3)** Carmichael
 Literature is evaluated for language development. Various categories of children's books are studied.

C.S. 4400 Advanced Reading Techniques (3)

Staff

Designed to study in depth current methods and materials for the teaching of reading. Background of knowledge about the total field of reading is broadened. Learning to read, assessment of reading progress and reading in the content areas are studied. Emphasis is placed on corrective techniques in practical classroom application.
 Prerequisite: C.S. 3400.

C.S. 4401 The Linguistic Approach to the Teaching of Reading (3)

Kleederman

Designed to demonstrate and develop linguistically oriented methods and materials for the teaching of reading. The relation of intonation to meaning, punctuation, and sentence structure and of structural grammar to perception, comprehension, and style are studied. Content is appropriate for all grade levels.
 Prerequisite: C.S. 3400

C.S. 4402 Reading Disabilities (2)

Carmichael, Knapp, Welle

Adaptation to individual needs is stressed, Attention is focused on the neurological, physical, mental and emotional aspects which may impede learning. Reading problems of individual children are diagnosed and remediated.
 Prerequisite: C.S. 4400.

C.S. 4403 Developmental Program in Reading (3)

Staff

Specific skills in the teaching of developmental reading. Although the focus is on the teaching of reading at the elementary school level, techniques developed will be appropriate to the teaching of reading at all levels.
 Prerequisite: C.S. 3400.

C.S. 4404 Practicum in Reading (2)

Carmichael, Knapp, Welle

Students work under supervision of a professor on individual creative projects in reading or developing material for clinical use or classroom use. Projects developed by students and professors usually in the first practicum session. Regular group sessions accompany project work. Open only to those officially in Collateral Program.
 Prerequisite or corequisite: C.S. 4402.

C.S. 4405 Reading in Early Childhood Education (2)

Knapp

A guided elective for the early childhood majors. Intended to give additional methods and materials for developing reading readiness and beginning reading.

C.S. 4406 Teaching Reading in the Secondary School (3)

Mayes

The reading curriculum in grades 7 through 12. Reading in the content areas, critical reading, methods and the organization of a developmental reading program, rate of reading, study skills and methods of study.

Media and Technology

C.S. 4700 Audio-Visual Media of Instruction (3)

Merlo, O'Meara

General principles, problems and practices involved in the selection, utilization and evaluation of audio-visual instructional media, materials, resources and experiences. The preparation of teacher-made and student-made audio-visual instruction materials. Practice in the operation and general care of audio-visual instruction materials. Practice in the operation and general care of audio-visual equipment. Exposure to newer technologies and learning systems.

C.S. 4701 Planning and Producing Audio-Visual Materials (3)

Merlo

Laboratory experience in the preparation and production of audio-visual materials such as transparencies, graphics, simple photography (35 mm slides and 8 mm film) and auditory media.
 Prerequisite: C.S. 4700.

Faculty: Bronstein, DeVore, Dumais, Gaines, Handler (Chairman), Knight, Miyakawa, Nakashima, Peters, Salt, Strickland

Major in Early Childhood Education

The early childhood program helps students to develop understandings, skills and attitudes necessary to function creatively and productively in urban and suburban day care, pre-school and kindergarten/primary classes. This includes selected professional courses and correlated extended field experience and student teaching in both the junior and senior years. Seniors have a 16 week field experience.

	semester hours
GENERAL EDUCATION REQUIREMENTS (see page 27)	36
Required Cognate Courses	15
<i>Within the Humanities Cluster:</i>	
Eng. 1900 Speech	3
Fine Arts (choice of performing area)	3
Music (choice of performing area)	3
<i>Within the Social and Behavioral Sciences and History Cluster:</i>	
Psy. 1000 General Psychology	3
Psy. 2100 Child Psychology	3
ADDITIONAL COGNATE COURSES	9
<i>Selected from Clusters I, II and/or III in General Education Requirements</i>	

MAJOR REQUIREMENTS 49

Required Courses		43
E.C. 3100 Children's Literature in Early Childhood	2	
E.C. 3100 Language Arts in Early Childhood	5	
E.C. 3200 Child Development and the Early Childhood Curriculum I	6	
E.C. 4200 Child Development and the Early Childhood Curriculum II	6	
E.C. 3400 Student Teaching	4	
E.C. 4400 Student Teaching	4	
Sp. Ed. 2051 Introduction to Education of the Handicapped	3	
E.P.S. 2250 Introduction to Education	3	
Ed. Psy. 3801 Educational Psychology	3	
H. Ed. 3237 The School and the Community Health Program	2	
One course in Foundations: E.P.S. 4010-4070	3	
Mus. 2305 Early Childhood Music Education	2	
Major Electives <i>two courses selected from the following 3 choices:</i>		6
E.C. 4100 Creative Techniques for Oral Language Development	3	
E.C. 4210 Guiding E.C. Teachers to Work with Children from Minority Cultures	3	
E.C. 4500 Seminar in Early Childhood or		
E.C. 4510 Independent Study in Early Childhood Education	3	

ELECTIVES (see page 28) 34

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There are certain courses the department feels are particularly valuable to the major as free electives: C.S. 4400, 4700; E.A.S. 3403; Eng. 1600, 3615, 3625; F.A. 3600-3601, 3650, 3920; I.D. 4850; I.S. 4002; Math. 1011-1012, 1014; P.Ed. 3621

General
Language
Curriculum and Methods
Organization and Administration
Student Teaching
Seminars and Independent Study

Language

E.C. 3100 Children's Literature in Early Childhood Education (2)

Gaines, Handler, Miyakawa

The different techniques and merits of story-telling put into practice with groups of children. Students learn to evaluate suitability of literature for various age levels. They become familiar with good contemporary authors and illustrators of children's books as well as the historical development of the literature for young children.

E.C. 3110 Language Arts in Early Childhood Education (5)

Salt, Strickland, Nakashima

The development of language skills (listening, speaking, reading, writing) in young children at various age levels; techniques for providing a sound language program for nursery-kindergarten-primary age children; development of students' own skills in speaking, reading aloud and handwriting; examination of important research in this area; evaluation and use of various methods and materials of instruction.

E.C. 4100 Creative Techniques for Language Development in Early Childhood (3)

Dumais

Understanding and practice in the use of creative techniques focused on oral language development. Includes story-telling, role-playing as a problem-solving technique, movement as a means to learning, choral reading and improvisation based upon children's feelings and experiences. Open only to Early Childhood seniors.

Curriculum and Methods

E.C. 3200 Child Development and Early Childhood Curriculum I (6)

Miyakawa

The first part of a 12-semester-hour sequence showing the development of the curriculum for children through the primary grades. New aims, approaches, methods and materials derived from current knowledge and research in child development. The history of curriculum development and recent trends. Study and evaluation of techniques and materials that good teachers use in various activities. Observation and participation in day care centers, nurseries and kindergartens with curricular focus on infancy to 5 year olds. Emphasis on interrelatedness of home and community.

E.C. 4200 Development and the Early Childhood Curriculum II (6)

Knight, Nakashima, Peters

Continuation of E.C. 3200. Emphasis on the program for the primary grades to include: various curricular approaches used in different school systems; functional learning experiences for children of different ages, maturity levels and abilities; the integration of subject areas: science, social science, mathematics, language arts, crafts, art, music and physical education; understanding of the parents' and child's points of view and the specific techniques and materials for reporting to parents.

Prerequisite: E.C. 3200.

E.C. 4210 Guiding Early Childhood Teachers to Work with Children from Minority Cultures (3)

DeVore, Peters

Designed to help qualify teachers for day-care centers, pre-kindergartens or pre-school programs and primary grades. Emphasis on: the special kind of experiences needed by culturally disadvantaged children from urban core, poverty rural or migrant backgrounds; activities that promote creativity, enrichment and motivation for later academic success; problems of personal identification or self-worth and social adaptability; relationships between parents, school specialists and community workers.

Student Teaching

E.C. 3400 Student Teaching in Early Childhood Education I (4)

Staff

Experience in full time teaching in a nursery school or day care center under the guidance and direction of a cooperating teacher and a college supervisor during the junior year.

Prerequisite: E.C. 3200

E.C. 4400 Student Teaching in Early Childhood Education II (4)

Staff

Assignment to kindergarten, first, second or third grade during the senior year.

Prerequisite: E.C. 3400.

Seminars and Independent Study

E.C. 4500 Seminar in Early Childhood Education (3)

Peters, Salt

Designed to enable the student to develop insights culled from previous college courses, public school experiences and other college activities. Opportunity is available to discuss the student's concerns and to focus his attention on professional communications and frontiers of learning in early childhood education. Open only to Early Childhood seniors who may select it as an alternate to E.C. 4510.

E.C. 4510 Independent Study in Early Childhood Education (3)

Handler, Salt

Designed to extend knowledge, attitudes and skills through individual experience and interpretation in the field of early childhood education. Methods of inquiry examined as a prelude to independent study. Open only to Early Childhood seniors who may select it as an alternate to E.C. 4500.

Faculty: Gunther, Hall (Chairman), Irwin, Krall, Kroll,
Metz, Meyerson, Robinson, Rockman, Zimmerman, Zois

Major in Earth Science

	semester hours
GENERAL EDUCATION REQUIREMENTS (see page 27)	36
Required Cognate Courses	7
<i>Within the Sciences and Mathematics Cluster:</i>	
Chem. 1083 Chemistry I <i>or</i>	
Phys. 2091 General Physics I	4
one of the following:	3
Math. 2407 Introduction to Functions I	
Math. 2408 Introduction to Functions II	
Math. 2411 Calculus I	
Math. 2412 Calculus II	
Further courses in Biology, Chemistry, Mathematics and Physics recommended.	
ADDITIONAL COGNATE COURSES	7
Chem. 1084 Chemistry II <i>or</i>	
Phys. 2092 Physics II	4
One additional Mathematics course from above list	3
MAJOR REQUIREMENTS	30
Required Courses <i>two of the following three courses:</i>	12
E.S. 1100 Cosmic Environments	8
E.S. 1200 Solid Earth Environments	
E.S. 1300 Atmosphere Environments	
E.S. 4953-4954 Earth Science Seminar I and II	4
Major Electives <i>selected only with departmental approval from upper division courses</i>	18
ELECTIVES (see page 28)	51
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Astronomy

E.S. 1100 Cosmic Environments (4) Staff
A study of heavenly bodies, solar systems and the sidereal universe, with emphasis on the nature of astronomical investigation.

E.S. 3168 Practical Astronomy (3) Zimmerman
Methods of determining, describing and using the positions and apparent motions of celestial bodies. Topics include fundamental position determination, time systems and standards, celestial navigation, the calendar, and related astronomical instrumentation. Prerequisites: E.S. 1100 and Math. 2412 or permission of the instructor.

E.S. 3171 Solar System Astronomy (3) Zimmerman
The characteristics of the individual objects and systems of objects that together comprise our solar system; theories on the origin of our planetary system. Prerequisites: Math. 2412, Phys. 2092 previously or concurrently, E.S. 1100 or permission of instructor.

E.S. 3172 Stellar Astronomy (3) Irwin
A study of stellar distances and motions, stellar brightnesses, binary and variable stars, stellar spectra, star clusters, stellar evolution and galactic structure. Prerequisites: E.S. 1100, Math. 2412, Phys. 2092 previously or concurrently or permission of the instructor.

E.S. 4181 Astrophysics (3) Hall
Study of atomic structure and spectra, behavior of a gas under conditions of astrophysical interest, general equations of stellar structure, properties of radiation, the radiative transfer equation and formation of the stellar spectra. Prerequisites: Math. 4403 and Phys. 2092

Geology

E.S. 1200 Solid Earth Environments (4) Staff
A study of the processes at work upon and within the earth in terms of their impact upon the preservation of the record of the history of the earth. Credit for graduation will not be granted for both Geog. 2010 and E.S. 1200.

E.S. 3261 Mineralogy (4) Kroll
An introductory study of minerals; their morphology, internal structure, origin, occurrence, and properties. Prerequisites: E.S. 1200 and Chem. 1083-1084, or permission of the instructor.

E.S. 3262 Environmental Geology (4) Gunther
Examination of the problems associated with man's urban pattern of civilization and resultant interactions with the geologic environment. Prerequisite: E.S. 1200 or permission of the instructor.

E.S. 3263 Structural Geology (4) Krall
A study of the architecture of the rock materials of the earth, including a description of geologic structure in terms of origin, principles, and mechanics of crustal deformation. Prerequisite: E.S. 1200 or permission of the instructor.

E.S. 3264 Paleontology (4) Metz
A study of the classification, relationships, and evolutionary history of fossils. Emphasis is placed on paleoecological relationships. Prerequisite: E.S. 1200 or permission of the instructor.

E.S. 3265 Geomorphology (4) Rockman
Analysis of the various land forms of the earth's surface in terms of their nature, origin, and evolution. The influence of the different geologic and climatic environments upon the development of land form. Map interpretation. Prerequisites: E.S. 1200 or permission of the instructor.

- E.S. 3266 Hydrology (3)** Rockman
The distribution and movement of water with emphasis given to surface waters, their relation to the fluvial aspects of geomorphology and to the impact of man on the hydrologic cycle.
Prerequisites: E.S. 1200 or permission of instructor.
- E.S. 3267 Economic Geology (4)** Kroll
The origin and occurrence of metallic ore deposits and non-metallic mineral deposits.
Prerequisite: E.S. 1200 or permission of the instructor.
- E.S. 3269 Astrogeology (3)** Rockman
The geologic environments of the moon and the planets examined with emphasis on the nature of the lunar surface. Consideration given to pertinent terrestrial environments and phenomena and to the related aspects of meteoritics.
Prerequisites: E.S. 1100 or 1200 or permission of the instructor.
- E.S. 4256 Glacial and Pleistocene Geology (3)** Krall
Analysis of the distribution, movement, and deposits of modern glaciers used to interpret glacial features formed during the Pleistocene glacial epoch. Theories concerning the cause or causes of continental glaciation.
Prerequisite: E.S. 1200 or permission of the instructor.
- E.S. 4260 Field Geology (2)** Metz
Field practice in the methods of geological mapping including the use of pace, compass, and clinometer surveys, the plane table and alidade, and aerial photographs.
Prerequisite: E.S. 3263 or permission of the instructor.
- E.S. 4261 Field Geology II (2)** Staff
Field conference and studies of one or more selected areas with written reports and maps.
Prerequisite: E.S. 4260 or permission of the instructor.
- E.S. 4263 Optical Mineralogy (4)** Kroll
Mineral identification through the use of the petrographic microscope by immersion and thin-section methods.
Prerequisite: E.S. 3261 or permission of the instructor.
- E.S. 4264 Petrography (4)** Kroll
Investigation of the textures, structures, and nomenclature of igneous, sedimentary, and metamorphic rocks through the use of the petrographic microscope.
Prerequisite: E.S. 4263 or permission of the instructor.
- E.S. 4265 Petrology (4)** Kroll
A study of the petrologic processes at work upon and within the crust of the earth which produce and modify rock bodies.
Prerequisite: E.S. 3261 or permission of the instructor.
- E.S. 4266 Stratigraphy (4)** Metz
Origin, composition, distribution and correlation of the stratified rocks.
Prerequisite: E.S. 1200 or permission of the instructor.

Meteorology

- E.S. 1300 Atmospheric Environments (4)** Staff
A non-mathematical study of the atmosphere, including meteorological instruments, the general circulation of the atmosphere, fronts and air masses, cyclones, hurricanes, and the upper atmosphere. Atmospheric phenomena discussed in terms of structure and prediction.
- E.S. 3360 Air Pollution (3)** Robinson
An introduction to the problem of air pollution as seen from a meteorological viewpoint.
Prerequisite: E.S. 1300 or permission of the instructor.

- E.S. 3370 Atmospheric Dynamics (4)** Zois
A mathematical formulation of the physical laws which govern weather processes and atmospheric motion.
Prerequisites: E.S. 1300, Phys. 2092, Math. 2412 or permission of instructor.
- E.S. 3371 Atmospheric Thermodynamics (4)** Robinson
The application of thermodynamic principles to the atmosphere with particular emphasis on the thermodynamics of moist air. Related topics such as hydrostatic equilibrium, altimetry and atmosphere convection treated.
Prerequisites: E.S. 1300, Phys. 2092, Math. 2412 or permission of instructor.
- E.S. 3372 Physical Meteorology (3)** Robinson
Qualitative and quantitative description of the non-dynamic meteorological phenomena including the production of precipitation, rainbows, halos, lightning, particle pollution and the earth's radiation balance. The interaction of light, radar, sound and shock waves with the atmosphere. Use of these phenomena in remote sensing.
Prerequisites: Math. 2411 and E.S. 1300 or permission of the instructor.
- E.S. 4362 Climatology (4)** Zois
Global distribution of the principal climatic elements with emphasis on the physical causes of climate. Theories regarding climatic change. (Same as Geog. 4620)
Prerequisite: E.S. 1300 or permission of the instructor.

Oceanography

- E.S. 4453 Introduction to Oceanography (4)** Meyerson
A survey of modern oceanography and its methods including characteristics of sea water, theories of ocean currents and, in general, applications of sciences to the study of the oceans.
Prerequisites: Biol. 1000, Phys. 1000 or Chem. 1000 or permission of the instructor.
- E.S. 4454 Marine Geology (4)** Meyerson
Introduction to the geology of the oceans, including tectonics, geochemistry, shoreline processes, stratigraphy, sedimentology, and related subjects.
Prerequisites: E.S. 1200, Chem. 1000 or permission of the instructor.

Special Topics and Seminars

- E.S. 4901-4902 Special Topics in Earth Science (3, 3)** Staff
Intensive study of specific topics of an advanced nature in the earth sciences. Subject of a semester's work varies.
Prerequisite: Permission of the instructor.
- E.S. 4953 Earth Science Seminar I (2)** Staff
In this course, the student is asked to pursue a problem of current interest. He prepares and presents his paper to a seminar group. Following the presentation, the speaker serves as moderator in a discussion of the subjects.
- E.S. 4954 Earth Science Seminar II (2)**
A continuation of E.S. 4953.

Faculty: Englander, Evans, Finch,
Hiraoka (Coordinator, Management Science),
Hurler, Matluck, Peyser, Schumacher (Chairman)

Major in Economics

	semester hours
GENERAL EDUCATION REQUIREMENTS (see page 27)	36
Required Cognate Courses	6
<i>Within the Behavioral, Social Sciences and History Cluster:</i>	
Econ. 1020-1021 Principles of Economics I and II	6
MAJOR DEPARTMENT REQUIREMENTS	30
Required Courses	12
Mgt. Sci. 2120 Business Statistics	3
Econ. 3020 Economics of Income and Employment	3
Econ. 3021 Intermediate Price Analysis	3
Econ. 3300 Money and Banking	3
Departmental Electives	18
From departmental offerings, at least 12 hours on 3000 and 4000 levels.	
ELECTIVES (see page 28)	58
Courses in mathematics or computer science recommended.	
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Collateral Program in Secondary Education Economics majors who wish to teach must complete the Collateral Program in Secondary Education and elect with departmental advisement appropriate courses in several social sciences.

Minor in Economics

From departmental offerings, at least 12 hours beyond Econ. 1100-1110 of which at least 6 hours must be upper division (3000-4000) level.

Major in Management Science

The Management Science program leads to the Bachelor of Science degree. It combines quantitative techniques with recent advances in the behavioral sciences for use in managerial-administrative decision making. With electives properly chosen to enhance professional plans, the student may, upon completion of the program, elect graduate school or move into entry-level positions in middle management, business administration, hotel management, banking, hospital administration, or other service areas. The student may elect a suitable internship in the senior year to gain actual experience in industry.

	semester hours
GENERAL EDUCATION REQUIREMENTS (see page 27)	36
Required Cognate Courses	12
<i>Within the Science and Mathematics Cluster:</i>	
Comp. Sci. 1931 Computer Arithmetic Algorithms	3
Comp. Sci. 1932 Principles and Procedures of Electronic Data Processing	3
<i>Within the Social Sciences and History cluster:</i>	
Econ. 1020-1021 Principles of Economics I and II	6
MAJOR DEPARTMENT REQUIREMENTS	30
Required Courses	15
Mgt. Sci. 2110 Quantitative Methods in Management Science	3
Mgt. Sci. 2120 Business Statistics	3
Mgt. Sci. 2200 Principles of Accounting I	3
Mgt. Sci. 3200 Principles of Accounting II	3
Mgt. Sci. 3310 Management of Corporate Finance	3
Departmental Electives	15
ELECTIVES (see page 28)	58
	124

Minor in Management Science

	semester hours
Required Courses	12
Mgt. Sci. 2110 Quantitative Methods in Management Science or approved substitute	3
Mgt. Sci. 2120 Business Statistics	3
Mgt. Sci. 2200 Principles of Accounting I	3
Mgt. Sci. 3310 Management of Corporate Finance	3
Electives	6
Any two additional courses from the Management Science area or an upper division (3000-4000) economics course.	

Economics

Theory, History, Systems

Econ. 1020 (1100) Principles of Economics I (3) Staff
The American economy; aggregate economics with emphasis on the relationships of income, consumption, savings and investment; money and banking, economic growth and the role of government.

Econ. 1021 (1110) Principles of Economics II (3) Staff
The allocation of resources and distribution of income through the price systems with emphasis on the American economic system.

Econ. 2030 (2110) History of Economic Thought (3) Staff
The development of economic thought with special emphasis on Aristotle, Mercantilism, Physiocrats, Hume, the Classical School, Marx and the Neo-Classical School.

Econ. 2040 (2130) American Economic History (3) Staff
Development of the American economy from colonial times to the present, including the development of agriculture and industry, the impact of technology and the evolution of the banking system.

Econ. 2041 (2140) European Economic History (3) Staff
Economic development of Europe from ancient times to the present with emphasis on the medieval era, the Reformation and the industrial revolution and conditions in the 20th century.

Econ. 2050 (2100) Comparative Economic Systems (3) Schumacher
Principles and practices of Capitalism, Socialism and Communism with special emphasis on the economies of the U.S.A. and U.S.S.R.

Econ. 3020 (3110) Economics of Income and Employment (3) Staff
An analysis of economic aggregates. Interrelationship between money supply, interest rates, output and employment. Classical, Keynesian, post-Keynesian theories.
Prerequisites: Econ. 1020-1021 or consent of instructor.

Econ. 3021 (3100) Intermediate Price Analysis (3) Staff
Theory of value and distribution. Prices, output and factor proportion problems of firms operating under conditions of competition, monopolistic competition, oligopoly and monopoly.
Prerequisites: Econ. 1020 or 1021 or consent of instructor.

Development, Planning, Fluctuations

Econ. 2100 (2200) Economic Development (3) Finch
A brief survey of development theories. Problems and factors of economic development. Case studies of underdeveloped countries.

Econ. 4100 (4200) Business Cycle Theory (3) Staff
Historical and theoretical analysis of business cycle theory. Measures to control cyclical fluctuations and methods of investment forecasting.
Prerequisites: Econ. 1020-1021 or permission of instructor.

Quantitative Methods

Econ. 3200 (3900) Introduction to Quantitative Methods in Economics (3) Staff
Mathematical statement of equilibrium, maximization and minimization for economic models. Introduction to dynamic techniques and linear production models. Review of necessary mathematics.
Prerequisites: Econ. 1020 and 1021 or permission of instructor.

Econ. 4200 (4100) Introduction to Econometrics (3) Staff
The testing and construction of economic models using mathematical and statistical models. Application in macroeconomics.
Prerequisites: Econ. 1020-1021 or permission of instructor.

Monetary and Fiscal Theory and Institutions

Econ. 3300 Money and Banking (3) Staff
The nature and function of money, operations of banks, the Federal Reserve System and the Treasury. Income and monetary theory and its applications to achieve stability, employment and growth.
Prerequisites: Econ. 1020-1021 or consent of instructor.

Econ. 3320 (3310) Public Finance (3) Staff
Principles of taxation, budgeting, public expenditure, debt management and fiscal policy with special reference to Federal, State and local governments.
Prerequisites: Econ. 1020-1021 or consent of instructor.

International

Econ. 4400 (4600) International Economics (3) Schumacher
Principles of international trade, international finance and exchange. Introduction to the major international organizations.
Prerequisites: Econ. 1020-1021 or permission of instructor.

Industrial Organization; Industry Studies

Econ. 3600 (3200) Government and Business (3) Staff
The development of public policies towards business. The principles, purposes and effectiveness of anti-trust laws and other government regulations of business.
Prerequisites: Econ. 1020-1021 or consent of instructor.

Econ. 3630 The Economics of Transportation (3) Staff
The operation of domestic transport modes, comparing the actual allocation of transportation resources with an ideal allocation dictated by free market criteria. The economic effects of regulation, subsidization and intermodal competition. Evaluation of proposals for integrated operation of the national transportation network.
Prerequisite: Econ. 1020-1021 or permission of instructor.

Manpower, Labor

Econ. 2800 Labor Economics (3) Staff
Economic analysis applied to the labor market and the wage structure; wage theories and policies; collective bargaining and unionism; labor problems.

Welfare, Consumer, Urban, Regional

Econ. 2900 The Economics of Poverty (3) Finch
The impact of industrialization and urbanization on society and the change in the attitude towards poverty. Theoretical aspects of the nature of poverty and the reasons for its existence in the U.S. The development of federal anti-poverty policies and programs.

Econ. 3930 (3800) Urban Economics Staff
An investigation of economic influence on the organization and form of urban areas. Problems and public policy issues in urban transportation, public finance, housing and poverty analyzed in relation to the evolving economic structure of metropolitan areas.
Prerequisites: Econ. 1020 and 1021 or permission of instructor.

Geography

- Geog. 1000 Fundamentals of Geography (2)** Staff
An analysis and description of major world geographic regions is provided and man-land relationships are stressed.
- Geog. 1010 Earth, The Environment of Man (3)** Staff
An introduction to the physical basis of the human habitat: landforms, climate, water, soils, and vegetation; regional patterns and relationships; and the representation of geographic phenomena on maps, charts and graphs with field work. (Credit for graduation will not be granted for both Geog. 1010 and E.S. 1200).
- Geog. 2010 The Geography of Man (3)** Staff
An introduction to human occupation of the earth's varied regions: population distributions, livelihoods, and physical settings.
Prerequisite: 3 hrs. in geography or permission of instructor.
- Geog. 2020 Conservation of Natural Resources (3)** Staff
A study of relationships among natural resources, technological development, population growth and levels of living as a means of exploring and evaluating the foundations of environmental management and conservation.
Prerequisite: 3 hours of geography or a science or permission of instructor.
- Geog. 3110 Practical Geographic Skills (3)** Kelland
The practical skills and techniques of the geographer, such as those developed for studies in the field and the library, and for graphic, cartographic, written and oral presentation of geographic information.
Prerequisite: 6 hrs. in geography or permission of instructor.
- Geog. 3210 Economic Geography (3)** Staff
Man's economic activities in relation to environmental factors; climate, resources and cultural influences.
Prerequisite: 6 hrs. in geography or permission of instructor.
- Geog. 3410 Urban Geography (3)** Staff
An examination of urban settlements with special emphasis on the practical application of modern geographic theories to the contemporary urban situation.
Prerequisite: 6 hrs. in geography or permission of instructor.
- Geog. 3420 The Resource Base and the Urban Pattern (3)** Kelland
An investigation of the problems posed by the multiplicity of uses for the limited natural resources of urban areas.
Prerequisite: 6 hrs. in geography or permission of instructor.
- Geog. 3430 Urban-Suburban Relationships (3)** Staff
A study of the ecological relationships between city and suburb.
Prerequisite: 6 hrs. in geography or permission of instructor.
- Geog. 3910 Regional Geography of Anglo-America (3)** Kelland
The relationships among basic geographic factors in Anglo-America are studied topically and regionally.
Prerequisite: 6 hrs. in geography or permission of instructor.
- Geog. 3920 Geography of Latin America (3)** Kelland
The physical geography and human adaptation in Middle and South America.
Prerequisite: 6 hrs. in geography or permission of instructor.
- Geog. 3930 Geography of Europe (3)** Staff
A regional analysis of the physical and human aspects of the geography of Europe.
Prerequisite: 6 hrs. in geography or permission of instructor.

- Geog. 3940 The Geography of the Far East (3)** Kelland
A study of the spatial distribution and diversity of the physical environment, populations, and resource utilization systems of China, Korea, Japan, and the nations of the Indo-Chinese peninsula.
Prerequisite: 6 hrs. in geography or permission of instructor.
- Geog. 3950 The Geography of New Jersey (3)** Kelland
The various geographic aspects of the State of New Jersey: the physical environment, adaptive diversity, resource base and economic and urbanization patterns.
Prerequisite: 6 hrs. in geography or permission of instructor.
- Geog. 4410 Regional and Metropolitan Planning (3)** Staff
The basic concepts and methods utilized by urban and regional planners.
Prerequisite: 9 hrs. in geography, including Geog. 3410.
- Geog. 4620 Climatology (4)** Staff
(Same as Earth Science 4620)
A description of the global distribution of the principal climatic elements with emphasis on the physical causes of climate.
Prerequisite: 9 hrs. in geography, including E.S. 3362 or permission of instructor.

Management Science Business and Management

Mgt. Sci. 1030 Fundamentals of Business Analysis (3) Hiraoka
Fundamental economic and business analysis of the domestic market; role of monetary policy; examination of marketing and financial functions and institutions; opportunities in international business.

Mgt. Sci. 2030 Business Organization and Management (3) Staff
Surveys the various forms of business organization and the methods and principles used in production, marketing, credit and competition. Examines the responsibilities of management in the organization of business.

Mgt. Sci. 3030 Personnel Management (3) Staff
Personnel recruitment, development, utilization and accommodation within the organization studied within the analytical framework of the behavioral sciences. Effective personnel policies and procedures emphasized with respect to the goals of the organization and the objectives of the organization's members.

Mgt. Sci. 4010 (4110) Production Management (3) Staff
Analysis of production operations in manufacturing and service operations. Production planning, systems and control introduced and related to such recent methodological developments as inventory forecasting, PERT/CPM, operations scheduling and queuing theory.
Prerequisites: Mgt. Sci. 2110 and 2120.

Quantitative Methods

Mgt. Sci. 2110 (2010) Quantitative Methods in Management Science (3) Hiraoka
An introductory course in those aspects of mathematics essential in management science. Includes sets, functions, matrix and vector algebra.

Mgt. Sci. 2120 Business Statistics (3) Staff
The methods used for the collection, presentation and analysis of business data, including sampling, the estimation of population parameters, index numbers, regression and correlation.

Mgt. Sci. 3120 Advanced Statistical Methods in Management Science (3) Staff
Bayesian decision theory and its relationship to classical statistical inference. Application to regression analysis and problems in management.
Prerequisite: Mgt. Sci. 2120 or permission of instructor.

Mgt. Sci. 4100 Operations Research (3) Hiraoka
Quantitative modeling for decision-making and operations research. Linear programming techniques; decision-theory and theory of games.
Prerequisite: Mgt. Sci. 2110 or permission of instructor.

Accounting

Mgt. Sci. 2200 (2100) Principles of Accounting I (3) Staff
An introduction to accounting concepts and principles involved in financial reports or proprietorships, partnerships and corporations including the techniques of debit and credit trial balances, adjustments and statements. Maximum of 25 students per section.

Mgt. Sci. 3200 (3100) Principles of Accounting II (3) Hurler
Use of accounting data as an aid in formulating managerial decisions analysis and interpretation of financial statements; the nature, source and flow of funds and the preparation of fund statements; the safeguarding of assets and the checking of the accuracy and reliability of accounting data through the use of internal control systems; special problems in connection with the accounting for cash, payroll and sales tax, investments, fixed assets and liabilities; and the study of cost accounting.
Prerequisite: Mgt. Sci. 2200.

Mgt. Sci. 3210 Intermediate Accounting I (3) Hurler
Study of financial statements for internal management purposes and as a reporting function; theory of classification and evaluation of accounts. Alternative concepts as advanced by professional societies.
Prerequisite: Mgt. Sci. 3200.

Mgt. Sci. 3220 Intermediate Accounting II (3) Hurler
Continuation of Mgt. Sci. 3210.
Prerequisite: Mgt. Sci. 3210.

Finance

Mgt. Sci. 3310 (3010) Management of Corporate Finance I (3) Staff
The study of the principles and procedures of finance and their applications to typical financial problems. Financial analysis, capital budgeting, long-term financing, cost analysis and concepts of valuation from the viewpoint of the financial manager.

Mgt. Sci. 3311 Management of Corporate Finance II (3) Staff
Management of current assets; cost of capital problems; short-term financing including leases, mergers and acquisitions.
Prerequisite: Mgt. Sci. 3310.

Mgt. Sci. 4300 (4200) Investments (3) Staff
The basic principles of investments suitable for the individual and for business organizations. A study of the security market, the market influences on security prices, exchange regulation and the development of investment programs.

Marketing

Mgt. Sci. 3410 (3020) Marketing (3) Staff
A general introduction to the field of marketing. Consumer goods and industrial goods, product development, channels of distribution, advertising and promotion, and pricing.

Mgt. Sci. 4420 Transportation and Physical Distribution (3) Hiraoka
Management and organization of physical distribution and transportation systems; optimum planning and processing methods; effect of institutions and regulations.

Internship

Mgt. Sci. 4900 Management Internship Program I (3) Staff
Independent work-study with research into specific aspect of employment. Coordination to be effected by student between employer and department. Term paper and seminar presentation.
Prerequisites: Senior standing and permission of department.

Mgt. Sci. 4901 Management Internship Program II (3) Staff
Continuation of Mgt. Sci. 4900.
Prerequisite: Mgt. Sci. 4900, permission of department.

Faculty: Alliston, Amick, Banich, Butcher, Chasnoff, Corrie, DelVecchio, Esposito, Foskey, Froude, Gatti, Guinnane (Chairman), Hennings, Herrick, Hidalgo, Kavett, Lemke, Lepp, Linkh, Lovett, McMillon, Moore, Orfan, Parker, Preil, Ramos, E. Richardson, J. Richardson, Rystrom, Sack, Sainz, S. Snyder, Susselman, Thetford, Weiger

Major in Elementary Education

The elementary education program prepares students for effective teaching in both urban and suburban classrooms through a sequence of courses in educational foundations, methodology, professional subject matter and field experiences. While major focus is on the ability to create good learning situations in a variety of subject matter areas, emerging school organizational patterns make it important for students to gain depth in a selected subject matter area. The program design requires the development of depth in one or more of the academic disciplines either through a minor or a concentration in relevant subject matter areas. Students completing the program receive a bachelor of arts degree and are eligible for a New Jersey teaching certificate in Elementary Education.

	semester hours
GENERAL EDUCATION REQUIREMENTS (see page 27)	36
Required Cognate Courses	19
<i>Within the Humanities Cluster:</i>	
Eng. 1900 Speech	3
Music or Art	3
<i>Within the Sciences and Mathematics Cluster:</i>	
One course in Mathematics	3
One course in Science	4
<i>Within the Social and Behavioral Sciences and History Cluster:</i>	
Psy. 1000 General Psychology	3
Psy. 2100 Child Psychology	3
ADDITIONAL COGNATE COURSES	9
<i>Selected from Cluster I, II and/or III in General Education Requirements</i>	

MAJOR REQUIREMENTS

Required Courses	41	59
C.S. 3400 The Teaching of Reading in the Elementary School	3	
C.S. 4400 Advanced Reading Techniques	3	
E.A.S. 3100 Elementary Curriculum and Methodology	3	
E.A.S. 3110 English in the Elementary School	3	
E.A.S. 3120 Mathematics in the Elementary School	3	
E.A.S. 3130 Science in the Elementary School	3	
E.A.S. 3900 Field Experience in the Elementary School	1	
E.A.S. 4140 Social Studies in the Elementary School	3	
E.A.S. 4900 Student Teaching	8	
Ed. Psy. 3801 Educational Psychology	3	
F.A. 3910 Art in Education <i>or</i>		
Mus. 2310 Elementary School Music Education	2	
P. Ed. 3538 Health and Physical Education in the Elementary School	3	
One of the following:	3	
E.P.S. 4010 History of Education		
E.P.S. 4020 Philosophy and Education		
E.P.S. 4030 Education and Social Change		
E.P.S. 4040 Comparative Education		
E.P.S. 4050 Urban Education		
E.P.S. 4060 Education in the Non-Western World		
E.P.S. 4070 Social Psychological Issues and the American Teacher		
Content Options		18
This requirement may be filled by completion of a minor or collateral program in reading, fine arts, library science or urban studies by a concentration in one of the arts and sciences or, with department approval, a combination of courses within two or three of the arts and sciences. (In the area of psychology, only courses listed in psychology major may be used to build a concentration.)		
ELECTIVES (see page 28)		24

Collateral Program in Secondary Education

Students should identify their intention to complete a secondary education collateral early in the sophomore year and should plan the program carefully with advisement from the Department of Educational Arts and Systems.

The program can be taken only in conjunction with an appropriate academic major. Majors in a science or a foreign language automatically receive New Jersey Certification to teach upon successful completion of the collateral program. Majors in English, mathematics, history, political science, economics, sociology or other social studies related fields seeking certification must, in addition to successful completion of both their major and the secondary collateral, meet all School of Education and State certification requirements. This applies to General Education as follows:

	semester hours
GENERAL EDUCATION (see page 27)	36
Required Courses	
Eng. 1900 Speech	
ADDITIONAL COGNATE COURSES	9
<i>Selected from Clusters I, II and/or III in General Education Requirements</i>	

A full semester, spent off-campus at a teaching center, includes student teaching and related course work. The eight hours for student teaching are required beyond the 124 needed for graduation.

	semester hours
Required Courses	11
Psy. 2010 Psychology of Adolescence	3
E.A.S. 4900 Student Teaching	8
Electives	15
PSYCHOLOGICAL FOUNDATIONS	3
<i>select one of the following:</i>	
Ed. Psy. 3801 Educational Psychology	
Ed. Psy. 3802 Educational Psychology of the Disadvantaged Urban Child	
Ed. Psy. 4801 Group Dynamics	
S.P.S. 4900 Guidance	
SOCIAL AND PHILOSOPHICAL FOUNDATIONS	6
<i>select two of the following:</i>	
E.P.S. 4010 History of Education	
E.P.S. 4020 Philosophy and Education	
E.P.S. 4030 Education and Social Change	
E.P.S. 4040 Comparative Education	
E.P.S. 4050 Urban Education	
E.P.S. 4060 Education in the Non-Western World	
E.P.S. 4070 Social Psychological Issues and the American Teacher	
SUBJECT MATTER METHODS <i>select one of the following in accordance with academic major:</i>	3
E.A.S. 4510 English in the Secondary School	
E.A.S. 4520 Mathematics in the Secondary School	
E.A.S. 4530 Science in the Secondary School	
E.A.S. 4540 Social Studies in the Secondary School	
E.A.S. 4550 Foreign Language in the Secondary School	
GENERAL METHODS <i>select one of the following:</i>	3
C.S. 4408 Teaching Reading in the Secondary School	
E.A.S. 4500 Experimental Patterns in Education	
E.A.S. 4501 Educational Theory and Applications	
E.A.S. 4502 Secondary Curriculum and Methodology	

Elementary Curriculum and Methods

- E.A.S. 3100 Elementary Curriculum and Methodology (3)** Staff
Elementary school objectives, practices, curriculum patterns and planning techniques.
Corequisites: E.A.S. 3100, 3110, 3130, 3900, C.S. 3400 and Ed. Psy. 3801 must be taken concurrently by full-time elementary education majors.
- E.A.S. 3110 English in the Elementary School (3)** Staff
Study of the teaching of literature, linguistics, written expression, cursive and manuscript writing, listening and speaking.
Corequisites: E.A.S. 3100, 3110, 3130, C.S. 3400 and Ed. Psy. 3801 must be taken concurrently by full-time elementary education majors.
- E.A.S. 3120 Mathematics in the Elementary School (3)** Kavett, Lovett, Orfan
Inquiry into the nature of mathematics and its implications for teaching, the use of visual materials in teaching, learning theories as they pertain to mathematics education and current elementary school mathematics programs.
- E.A.S. 3121 Geometry in Elementary School Mathematics (3)** Orfan
An examination of the scope of geometry in the elementary school mathematics program.
- E.A.S. 3130 Science in the Elementary School (3)** Lepp, E. Richardson, Sack
A study of science content and teaching methodology including student planning, development and presentation of instructional methods and media.
Corequisites: E.A.S. 3100, 3110, 3130, 3900, C.S. 3400 and Ed. Psy. 3801 must be taken concurrently by full-time elementary education majors.
- E.A.S. 3131 Space Science Workshop for Elementary School (3)** Lepp, E. Richardson
Descriptions and explanations of all the principal phenomena and features of the earth, the atmosphere and space. Problems and solutions appropriate for elementary science education.
- E.A.S. 3132 Field Science for Elementary School Teachers (3)** Lepp, E. Richardson
Consideration is given to natural resources, both physical and biological, as applied to elementary school science instruction.
- E.A.S. 3133 Inquiry-Centered Science Programs for 5 to 9-Year Old Children (3)** E. Richardson
Analysis and comparison of five process-centered science programs specifically prepared for the children of primary grade levels, K-3.
Prerequisite: Elementary Education majors — E.A.S. 3130; Early Childhood majors — E.C. 3200 and senior class standing; all other students — senior class standing.
- E.A.S. 3134 Environmental Studies for Elementary School Teachers (3)** Sack
An interdisciplinary approach to the development of environmental studies in the elementary science curriculum.
- E.A.S. 3150 Introduction to Bilingual Education (3)** Hidalgo
Analysis of concept of bilingualism; study of objectives, curriculum, methods, materials and existing programs in bilingual education. Observation in bilingual classrooms.
- E.A.S. 3151 Teaching Techniques in Spanish for Bicultural Schools (3)** Hidalgo
Fundamental concepts of Spanish language and culture as they relate to the curriculum of the urban elementary school (K-8). Idiomatic expression, language and communication skills with Spanish-speaking children, parents and communities. Extensive field work.
- E.A.S. 4100 Seminar in Elementary Curriculum and Methodology (2)** Foskey
Analysis of professional practices and proposals and extension of student knowledge and skill in teaching and learning processes.
Prerequisite: E.A.S. 3100.

- E.A.S. 4140 Social Studies in the Elementary School (3)** Staff
Study of the objectives of elementary school social science, planning techniques, teaching materials, innovative programs and evaluation, emphasizing the interdisciplinary approach.

Independent Study

- E.A.S. 4202 Independent Study in Educational Arts and Systems (1-6)**
Intensive study in area of elementary and/or secondary education, carried on individually under the guidance of a faculty member in education. Open only to seniors enrolled in elementary and secondary education programs with permission of the instructor or department chairman.

Secondary Curriculum and Methods

- E.A.S. 4502 Secondary Curriculum and Methodology (3)** Herrick
Survey of secondary school curriculum. Planning techniques, general methods of instruction and evaluation.
- E.A.S. 4510 English in the Secondary School (3)** Gatti, Thetford
Values and objectives of secondary school English. Curriculum organization and methods of instruction.
- E.A.S. 4520 Mathematics in the Secondary School (3)** Butcher, Kavett
Values and objectives of secondary school science. Curriculum organization and methods of instruction.
- E.A.S. 4521 Materials for Mathematics Instruction (3)** Butcher, Kavett
Development of materials to facilitate learning of mathematical concepts. Emphasis on new curricula and media.
- E.A.S. 4522 Mathematics in the Junior High School (3)** Butcher, Kavett
Values and objectives of arithmetic, general mathematics and first year algebra. Curriculum organization and methods of instruction.
- E.A.S. 4530 Science in the Secondary School (3)** Del Vecchio
Values and objectives of secondary school science. Curriculum organization and methods of instruction.
- E.A.S. 4540 Social Studies in the Secondary School (3)** Esposito, Linkh
Values and objectives of secondary school social studies. Curriculum organization and methods of instruction.
- E.A.S. 4550 Foreign Language in the Secondary School (3)** Edreira
Values and objectives of secondary school foreign language. Curriculum organization and methods of instruction.



K-12 Curriculum and Methods

E.A.S. 3710 Teaching English as a Second Language (3)

Brilliant

Analysis of the problems involved in English instruction where English is a second language. Ethnic and linguistic backgrounds of children for whom English is a second language. Accepted by the English department as fulfilling the requirement in language for English majors.

E.A.S. 3711 Children's Literature in Education (3)

Hennings, Ramos, Weiger

A critical study of children's books and their use in elementary and secondary school classrooms.

Prerequisite: E.A.S. 3110.

E.A.S. 4700 (4500) Experimental Patterns in Education (3)

Banich, Moore, Gatti

Innovations and issues in curriculum, instruction and learning theory.

E.A.S. 4701 (4501) Educational Theory and Applications (3)

Staff

Educational theories related to classroom practice at designated student teacher centers, with current educational literature and documents as source material.

Field Experience

E.A.S. 3900 Field Experience in the Elementary School (1)

Staff

A three-week period spent in observing and participating in an elementary classroom.

Corequisites: E.A.S. 3100, 3110, 3900, C.S. 3400 and Ed. Psy. 3801 must be taken concurrently by day college elementary education majors.

E.A.S. 4900 Student Teaching (8)

Staff

Full-time teaching experience in a public school under the direction of a college supervisor and cooperating teacher.

E.A.S. 4905-4906 Supervised Teaching Seminar (4, 4)

A two-semester course including class sessions and on-the-job supervised teaching.

For the following:

Students in a degree program who are teaching under emergency certification.

Students who have a bachelor's degree and are teaching under an emergency or provisional certificate, but who have not completed student teaching.

Faculty: Allen, Chasnoff, Dorr, Franklin, Granger, Hancock, Healy, Lorusso, Lynn, Muniz, Nichols, O'Brien, Pierson, Pitt, Polglaze, Tehie (Chairman), Welch, Wilkins, Williams

The Department of Educational Policy Sciences is concerned with the structure and function of schools and other institutions and forces which educate. Its courses deal mainly with the philosophical and sociological background of education and with the construction and implementation of educational policy adequate for contemporary society. Its courses seek to integrate the academic disciplines into an instrument for viewing and analyzing education and its relationships to society. The department strives to engage students in a progress aimed at enabling each to reassess, extend and systematize his or her own thinking. This is accomplished through contact with and critical analysis of the ideas of others, whether teachers, students or writers, and through vital involvement with the social realities affecting education. In teaching, the department is particularly concerned with the way students learn, which it considers to be at least as important as what they learn.

Foundations

E.P.S. 2000 Introduction to Education (3) Franklin, Healy
An invitation to students to consider the nature, aims and methods of education particularly in the light of their own school and social experience. Emphasis throughout on the major problems and opportunities of the present and future. Every effort made to involve participants actively, in class and out, in the theory and practice of education.

E.P.S. 3000 Education and Community Institutions: S.C.A.T.E. (3) Welch
An invitation to students to consider the nature, aims and methods of community institutions in the education of our citizens. Field experience arranged under the auspices of S.C.A.T.E., *Student Committee for Advancement Through Education*.

E.P.S. 4010 History of Education (3) Franklin, Pitt
Consideration of education as a dynamic institution in the culture of Western Civilization from Greek beginnings to contemporary America. Traced within a total historical context which includes geography, influential leadership and other developmental factors which are often the deep roots of evolution and innovative ideas and practices in an ever-changing society.

E.P.S. 4020 Philosophy and Education (3) Healy, Tehie, Welch
Analysis of current views on aims and processes of education. Students encouraged to formulate their own rational view of these aims and the educational practices consistent with them. Attention given to earlier insights most related to the present and possible future situation of education. Essence of course is dialogue.

E.P.S. 4030 Education and Social Change (3) Welch
To help the educator understand his role as a change-agent, the main theories of change, resulting from inventions, reforms, revolutions and utopias are examined. Special attention given to the problem of resistance to needed educational and social innovations.

E.P.S. 4040 Comparative Education (3) Healy, Williams
Education in the United States and in other representative areas of the world compared. Emphasis placed on the foundations of education in their historic, socio-economic, and political setting.

E.P.S. 4050 Urban Education (3) Welch, Williams
For students interested in teaching in an urban school system, especially inner-city: short orientation to the history and sociology of the contemporary urban scene; survey of the newer methods and helpful techniques; visits to selected urban classrooms; speakers representing important community offices.

E.P.S. 4060 Education in the Non-Western World (3) Franklin, Williams
An analysis of the role of education as an agent of social, economic, and political development in the non-western world. An appraisal of the impact of UNESCO and American programs of technical assistance, developing education and human resources, on the national development of these countries.

E.P.S. 4070 Social Psychological Issues and the American Teacher (3) Staff
Involvement of prospective teachers and citizens in discussions of major social issues facing the nation from a socio-psychological point of view. Examples are *Academic Freedom and the Teacher* and *Controversial Issues and the Teacher*. Values and attitudes toward such problems questioned, compared and examined for their effect on classroom teaching, the teacher's ego-involvement and interpersonal relationships.

E.P.S. 4080 School and Society in the Soviet Union (3) Healy, Williams
The role played by cultural and educational forces in the Soviet drive for world power, Russian and Soviet history, economics, philosophy and art, as well as the lives of selected individuals, are studied in order to understand the formal and informal processes of education.

Faculty: Bauer, Brilliant, Currier, De Fanti, Dolkey, Evans, Fyne, Hacke, Haselton, Holzschlag, Huberman (Chairman), Kennedy, Krueger, Larsen, Messerschmidt, Mott, O'Day, Okin, Patrick, Reicker, Reifsnnyder, Ritchie, Sanders, Scotto, Suiter, Thompson, Urang, Viscusi, Weinstein, Wendt.
English-Speech; Dunn, Fry, Murphy, Teran

Major in English

	semester hours
GENERAL EDUCATION REQUIREMENTS (see page 27)	36
MAJOR REQUIREMENTS	30
Required Courses <i>One course in each of the following areas with departmental advisement:</i>	18
American Literature	
British Literature	
Figures	
Language	
Literary Genre	
Literary Period	
Major Electives	12
ELECTIVES (see page 28)	58
	124

Collateral Program in Secondary Education. Students who wish certification to teach English in secondary schools must also complete the Collateral Program in Secondary Education.

Major in English
Speech-Theatre-Media Studies Option

	semester hours
GENERAL EDUCATION REQUIREMENTS (see page 27)	36
Required Cognate Courses	6
<i>Within the Humanities cluster:</i>	
Eng. 1900 Speech I	3
Eng. 2215 Shakespeare Survey	3
ADDITIONAL COGNATE COURSES	12
Two courses in Literature for the Theatre	6
<i>two courses from the following areas:</i>	6
Twentieth Century Literature	
Writing or Language	
Poetry	
MAJOR REQUIREMENTS	30
Required Courses	12
<i>One of the following:</i>	3
Eng. 1920 Introduction to the Theatre	
Eng. 2975 Introduction to the Mass Media	
Eng. 4940 History of the Theatre	
<i>Out of the following 4 groups, one course in each of three groups:</i>	
Eng. 1930 Acting I or	
Eng. 2905 Public Speaking I	
Eng. 2900 Advanced Speech or	
Eng. 3920 Theatre Speech and Scene Studies	
Eng. 1940 Technical Theatre Production	
Eng. 3910 Oral Interpretation or	
Eng. 3925 Directing I	
Major Electives selected with departmental advisement from courses in the Speech and Theatre area.	18
ELECTIVES (see page 28)	46
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Minor in Speech and Theatre Arts

semester hours

Required Courses

Eng. 1900 Speech	3	15
Eng. 1920 Introduction to the Theatre	3	
Eng. 1930 Acting I	3	
Eng. 1940 Technical Theatre Production	3	
Eng. 3925 Directing I	3	

Electives one of the following:

Eng. 2905 Public Speaking	3
Eng. 2975 Introduction to Mass Media	
Eng. 3910 Oral Interpretation	
Eng. 3935 Creative Drama	
Eng. 3940 Children's Theatre	
Eng. 4940 History of the Theatre	
Eng. 4950 Seminar in Theatre Administration	

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Composition

Eng. 1000 is prerequisite to all English courses beyond the 1000 level except in cases of exemption or permission of the instructor.

Eng. 1000 Composition I (3)

Staff
The first half of a two semester course developing the student's skill in writing expository prose and in research.

Eng. 1001 Composition II (3)

Staff
A continuation of Eng. 1000 with increased attention to critical reading and analytical writing.

Prerequisite: Eng. 1000.

Eng. 2000 Advanced Composition (3)

Staff
Continued instruction and practice in techniques of writing to develop a dependable prose style.

Eng. 2010 Creative Writing (3)

Fyne, Ritchie
Connotation, description, characterization, dialogue, point-of-view, and plotting, as well as experimentation with major literary forms.

Eng. 2020 Journalism (3)

Fyne
Instruction in theoretical and practical journalistic techniques, with assignments in feature writing, reporting, proof reading and editing.

Eng. 2025 Journalism in the Free Society (3)

Fyne
Analysis and evaluation of the journalist's role in a free society emphasizing the need for objective reporting.

Language

Eng. 1101 English as a Second Language I (3)

Brilliant, Messerschmitt
Practice in understanding, speaking and reading English for the student whose native language is not English.

To be required of all students whose score on the Michigan Test of English Language Proficiency indicates that they are not prepared to do college work in English.

Eng. 1102 English as a Second Language II (3)

Brilliant, Messerschmitt
Continued practice in speaking and reading English for the students whose native language is not English. Instruction in writing short passages.

Prerequisite: Eng. 1101 or consent of instructor.

Eng. 2100 Introduction to Descriptive Linguistics (3)

Brilliant
Phonology, morphology and syntax of English and other languages, and techniques of analysis, with some consideration given to development of language in children and to bilingualism.

Eng. 3100 Historical Development of English Language (3)

Staff
The development of English traced from Old English to modern British and American English.

Eng. 3105 Language, Meaning and Human Behavior (3)

Hacke
Theories of meaning and behavioral consequences of language.

Eng. 3110 Descriptive American English Grammar (3)

Hacke
Syntax of contemporary American English, through analysis of structural and generative grammar, usage and dialect.

Eng. 4100 Readings in Language (3)

Thomason
Language, systems, semantics, general semantics, linguistics and related matters.

Prerequisite: Any one other English language course.

Also acceptable for the Language requirement of English majors:

E.A.S. 3710 Teaching English as a Second Language.

Survey

Eng. 2200 World Literature (3)

Staff
Selected readings in literature of the Western World from ancient times to the present.

Eng. 2205 British Literature I (3)

Staff
Major writers, styles, ideas in English literature from Beowulf to Milton.

Eng. 2206 British Literature II (3)

Staff
Major writers, styles, ideas in English literature from Milton to the 20th century.

Eng. 2215 Shakespeare Survey (3)

Staff
An introduction to Shakespeare's comedies, histories and tragedies.

Eng. 2220 American Literature to 1860 (3)

Staff
A survey from colonial times to the Civil War with emphasis on Franklin, Cooper, Poe, Emerson, Thoreau and Melville.

Eng. 2221 American Literature from 1860 to 1914 (3)

Staff
A survey from the Civil War to World War I with emphasis on Whitman, Twain, James, Howells, Crane and Dreiser.

Eng. 3200 Literature of the American Negro (3)

Staff
Historical study of writings of Afro-American poets, novelists and essayists, with emphasis on the contribution of the American Negro to American letters.



- Eng. 3205 Literature of the East (3)** Currier
Traditional and contemporary writings (epic, novel, poetry, short story, drama) from the Near and Far East examined for literary, aesthetic and trans-cultural values.
- Eng. 3210 Russian Literature in Translation (3)** Reifsnnyder
Representative works in English translation of major writers from Pushkin to Solzhenitzen.
- Eng. 3230 Theme and Motif in Literature (3)** Scotto
A study of selected themes in literature of the Western world, their origins, variations and adaptability to different literary eras, with attention given to the effects of symbol, motif and genre on theme.
Prerequisite: 3 credits in literature survey.

Period

- Eng. 3300 Ancient Greek and Roman Literature in Translation (3)** Reifsnnyder
Greek and Roman literature in English translation from Hesiod to Seneca.
- Eng. 3305 Literature of the Middle Ages in Europe (3)** Larsen
Analyzes outstanding literary works, relates them to the period and explores the relevance of the works to Western man, past and present.
Prerequisite: A literature survey or permission of instructor.
- Eng. 3306 Literature of the Renaissance in Europe (3)** Larsen
Analyzes outstanding literary works, relates them to the period and explores the relevance of the works to Western man, past and present.
Prerequisite: A literature survey or permission of instructor.
- Eng. 3310 The Sixteenth Century English Renaissance (3)** Scotto
A study of Tudor poetry and prose (exclusive of Shakespeare) against the social, political and literary background.
Prerequisite: Eng. 2205 or permission of instructor.
- Eng. 3315 17th Century Prose and Poetry (3)** Wendt
Major works of Milton, Donne, Dryden, Bunyan, the Metaphysical and Cavalier poets and other writers, examined in relation to the 17th century and modern times.
- Eng. 3316 Elizabethan and Stuart Drama: 1587-1642 (3)** Ritchie
Major writers from Marlowe to the closing of the theatres in 1642, with the omission of Shakespeare.
Prerequisite: Eng. 2205 or Eng. 2215 or permission of the instructor.
- Eng. 3320 Restoration and Eighteenth Century Drama (3)** Ritchie
British dramatic literature of the period from 1660-1800, with emphasis on the comedies of Wycherly, Congreve, Sheridan and Goldsmith.
- Eng. 3325 Eighteenth Century English Literature (3)** Staff
Pope, Swift, Boswell and Johnson with emphasis on satire, on the development of periodical literature and on biography.
- Eng. 3330 English Novel of the 18th Century (3)** Staff
The development of the modern English novel with attention to Defoe, Richardson, Fielding, Smollett, Sterne.
- Eng. 3335 English Romantic Literature (3)** Wendt
Writings of Wordsworth, Byron, Shelley, Coleridge, Hazlitt and Lamb, studied in relation to the history and culture of the time.
- Eng. 3340 Victorian Literature (3)** Suiter
Readings from selected novelists and such authors as Carlyle, Arnold, Mill, Ruskin, Tennyson, Browning and the pre-Raphaelites.
- Eng. 3345 Twentieth Century British Literature (3)** Larsen
Prose fiction, drama, poetry, biography and criticism and their connection with the dynamics of the culture.

- Eng. 3350 Contemporary Literature (3)** Staff
American, English and European literature of the twentieth century.
Other courses acceptable for the Period requirement of English majors:
Eng. 3506 Modern British and American Poetry
Eng. 3507 Contemporary British and American Poetry: 1950 to Present
Eng. 3515 Modern Drama

Figures

- Eng. 4400 Chaucer (3)** Scotto
Analysis of his prose in terms of language, versification, literary characteristics and historical background.
Prerequisite: Eng. 2205, Eng. 3100 or permission of instructor.
- Eng. 4403 Sidney, Spenser and Marlow (3)** Scotto
Intensive study of experimentation and innovation in poetry, fiction and drama before Shakespeare; the writers, models, adaptations and influences on these genres.
Prerequisites: Eng. 2205 or permission of the instructor.
- Eng. 4405 Shakespeare: Selected Plays (3)** Dolkey, Scotto
A detailed analysis of texts, sources, analogues and criticism of a limited number of plays.
Prerequisite: Eng. 2215.
- Eng. 4410 Milton (3)** Scotto
Intensive reading of his works with emphasis on critical analysis, scholarly problems and contemporary philosophical and political background.
Prerequisite: Eng. 2205, Eng. 2206 or permission of instructor.
- Eng. 4413 William Blake (3)** Urang
Intensive reading of selected lyrics and shorter prophetic poems, with special emphasis on Blake as visionary writer in his cultural context (and in ours).
- Eng. 4415 Poe, Hawthorne and Melville (3)** Weinstein
The poetry, fiction and criticism of the three writers with emphasis also on literary, biographical and historical data.
Prerequisite: Eng. 2220 (recommended) or Eng. 2221.
- Eng. 4420 Fitzgerald, Faulkner and Hemingway (3)** Weinstein
The major fiction of the writers with emphasis on literary, biographical and historical values.
Prerequisite: Eng. 2220 or Eng. 2221 (recommended).
- Eng. 4430 Ibsen, Strindberg, Chekhov and Shaw (3)** Dolkey, Ritchie
Representative plays of these four major figures.
Prerequisite: 3 credits in a literary survey course.

Genre

Eng. 2500 Children's Literature (3) Fry, Krueger
A survey of traditional and modern stories, poems, plays, and informational materials for children.

Eng. 2505 Literature for the Adolescent (3) Krueger
A study of traditional and contemporary literature of interest and value to adolescents.

Eng. 3500 Poetry (3) Thomason
The corpus, origins and use of English language poetry and its relation to social currents of our time.

Eng. 3506 Modern British and American Poetry: 1900-1950 (3) Huberman
The genesis of modern poetry, its major characteristics and its relations to the poetic tradition.

Eng. 3507 Contemporary British and American Poetry: 1950 to Present (3) Huberman
An exploration of the most significant developments in British and American poetry since 1950.

Eng. 3510 Aspects of the Novel (3) Reicker
Such novelists as Joyce, Gide, Kafka, Lawrence, Hemingway, Faulkner and Woolf, studied in relation to their antecedents in the realistic novel of the 19th century.

Eng. 3515 Modern Drama (3) Dolkey, Ritchie
Representative plays of such dramatists as Ibsen, Strindberg, Chekhov, Miller and Genet, discussed in terms of form and dramatic structure.

Eng. 3520 Critical Approaches to Literature (3) Staff
History and theory of literary criticism, with training for critical writing.
Prerequisite: Instructor's permission.

Eng. 3525 Literary Naturalism (3) Bauer
An intensive study of naturalism as a reflection of social and scientific ideas and of aesthetic developments in literature during the late nineteenth and the early twentieth centuries.

Eng. 3530 The Short Story (3) Huberman
The history, theory and practice of the European and American short story.

Eng. 4500 Investigations in Major Modern Poets (3) Huberman
An intensive study of the work of seminal poets of the twentieth century, such as Yeats, Pound, Williams and Stevens.
Prerequisite: 3 hours in poetry.

Other courses acceptable for the Genre requirement of English majors:

Eng. 3316 Elizabethan and Stuart Drama: 1587-1642

Eng. 3320 Restoration and 18th Century Drama

Eng. 3330 English Novel of the 18th Century

Seminars

Eng. 4800 Senior Seminar (3) Staff
Intensive study in an area of literature and language, including individual research which is reported to the seminar group. Limited to senior English majors.

Speech and Theatre

Eng. 1900 (1600) Speech (3) Staff
Various aspects of speaking and listening; the development of effective voice and speech habits, with practice in public speaking, parliamentary procedure and oral reading.

Eng. 1920 (1610) Introduction to the Theatre (3) Staff
A basic survey of the art and craft of the theatre.

Eng. 1930 (1630) Acting I (3) Staff
A study of the development of acting as an art form and as a practical study of the theories and techniques of acting, including some work in characterization.

Eng. 1935 Movement I (3)
Control of the actor's body, including the art of pantomime, and historic dance for the stage.
Prerequisite: Eng. 1930.

Eng. 1940 (1620) Technical Theatre Production (3) Staff
An introduction to the basic elements of scenery, costuming, make-up, sound and lighting.

Eng. 2900 (2600) Advanced Speech (3) Staff
Continued instruction and practice in effective speech techniques, including personal laboratory experiences.

Eng. 2905 Public Speaking (3)
The preparation and delivery of various types of speeches for public audiences.
Prerequisite: Eng. 1900 or permission of the instructor.

Eng. 2915 Group Discussion (3)
An analysis of the theory and process involved in group problem solving.
Prerequisite: Eng. 1900.

Eng. 2945 Scenic Design I (3)
Theatre design problems in concept and composition are examined through the development of ground plans, elevations, construction drawings and model-making.
Prerequisite: Eng. 1940.

Eng. 2955 Makeup I (3)
Basic straight and character makeup, using grease-paint, pancake and plastics.

Eng. 2975 Introduction to Mass Media (3)
The effects of mass media in American society which have led to the development of taste for the popular arts.
Prerequisite: Eng. 1900.

Eng. 3900 Voice and Speech (3)
Voice and speech improvement, treating the voice as a subjective, living phenomenon.
Prerequisite: Eng. 1900.

Eng. 3905 (3600) Elementary Phonetics in the Study of Dialects (3) Fry
Dialect as a tool in oral interpretation, using phonetic transcription to develop auditory, muscular and imitative speech skills.

Eng. 3910 (3610) Oral Interpretation (3) Dunn, Fry, Murphy
Instruction and practice in the oral interpretation of literature.

Eng. 3915 Oral Interpretation of Children's Literature (3)
Theory and practice in the oral interpretation of children's literature with special emphasis on storytelling, prose and poetry reading.
Prerequisite: Eng. 1900.

Eng. 3920 (4605) Theatre Speech and Scene Studies (3)

Fry

The traditional course in speech for the actor comprising study and practice in using the voice, breath control, articulation-enunciation-pronunciation, phonetics, projection and acoustics. Practical application is supplied in scene studies.

Prerequisite: Eng. 1900 or equivalent.

Eng. 3925 (3630) Directing I (3)

Fry, Murphy, Teran

Examination of the historic and contemporary role of the director. His preparation of a prompt book and his work from play selection through rehearsal procedures to final production. Techniques applied to scene and one-act production by student-directors.

Prerequisite: Eng. 1930 or permission of instructor.

Eng. 3930 Acting II (3)

An advanced course in acting as a creative process, including acting theories, methods and styles.

Prerequisites: Eng. 1900 and 1930.

Eng. 3935 (3615) Creative Drama (3)

Dunn, Fry

Exploration of the creative process, involving use of body movement, color, sound, light, space and language.

Eng. 3940 (3625) Children's Theatre (3)

Dunn, Fry, Teran

Theory and practice of theatre for children.

Eng. 4920 Choric Drama and Readers Theatre (3)

A performance course in verse speaking, choric drama and readers theatre.

Prerequisites: Eng. 1900, 3910.

Eng. 4925 Directing II (3)

Artistic and technical problems in directing the classical, the period, the avant-garde and experimental play.

Prerequisites: Eng. 1900, 1930 and 3925.

Eng. 4940 (4600) History of the Theatre (3)

Teran

Theatrical production from early primitive rituals down the centuries to today's theatre. Emphasis placed on directors, actors and theorists.

Eng. 4945 Practical Experiences in Contemporary London Theatre (3)

A survey of the development of British theatre and contemporary London theatre. Initial seminar discussions and lectures will be given in Newark State College; two weeks of theatre experiences in London, England, will be included.

Prerequisite: Interview with the instructor.

Eng. 4950 Seminar in Theatre Administration (3)

A problem-centered seminar dealing with contemporary theatre administration.

Prerequisites: Eng. 1900, 1910 and 1940.

Faculty: Bastian, Blocton, Buchner, Burger, Cade, Cohan, Coon, Cornish, Giacalone, Goodwin, Greenberg, Hartshorn, Holloway, Howe, Jochowitz, Jones, Lipscomb, Lord, Markholm, Metzger, Nicolescu, Pierro, Schwartz (Chairman), Stotz, Tatton, Topper, Troy, Victoria, Wilber

Studio Major Specialized Option

This program is intended for the student who wishes to develop a studio competency in a specialized area. It is not intended for the student who wishes New Jersey teacher certification.

	semester hours
GENERAL EDUCATION REQUIREMENTS (see page 27)	36
MAJOR REQUIREMENTS	31
Required Courses	19
F.A. 1100-1101 Design I and II	6
F.A. 1700-1701 Art History I and II	6
F.A. 3800 Philosophy of Art	3
F.A. 1230 Drawing	3
F.A. 2000 Visual Comprehensive	1
Major Electives	12
F.A. 3200 Painting I or	
F.A. 3300 Sculpture I	3
Three studio courses	9
<i>At least two must be in a single area of concentration.</i>	
ELECTIVES (see page 28)	57
	124
Minor in Fine Arts	
For students wishing to develop their general understanding and ability in the visual arts. It is not designed to develop teaching competence.	
	semester hours
Required Courses	12
F.A. 1100-1101 Design I and II	6
F.A. 1700-1701 Art History I and II	6
Electives selected with approval of department	6
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Studio Major General Option

This curriculum provides a general major in fine arts. When taken in conjunction with the Collateral Program in Fine Arts Education and Student Teaching, it meets requirements for the Special Field Certificate — Art (K-12).

	semester hours
GENERAL EDUCATION REQUIREMENTS (see page 27)	36
MAJOR REQUIREMENTS	31
Required Courses	28
F.A. 1100-1101 Design I and II	6
F.A. 1700-1701 Art History I and II	6
F.A. 3800 Philosophy of Art	3
F.A. 1230 Drawing	3
F.A. 2000 Visual Comprehensive	1
F.A. 3200 Painting I	3
F.A. 3300 Sculpture I	3
F.A. 3260 or 3261 Printmaking	3
Major Electives <i>one of the following:</i>	3
F.A. 3400 Ceramics I	3
F.A. 3430 Jewelry I	3
F.A. 3460 Introduction to Textiles	3
F.A. 3480 Furniture Making	3
ELECTIVES (see page 28)	57
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Students in the Collateral Program in Fine Arts Education are advised to elect one or two additional courses in the Crafts area.

Collateral Program in Fine Arts Education

This program is collateral to the Studio Major-General Option major and meets requirements for a New Jersey Special Fields Certificate — Art (K-12). The student who wishes to teach and who has completed a major program other than the General Option is responsible for meeting the requirements of certification through the use of free electives. F.A. 4990 Student Teaching in Fine Arts (8 s.h.) is to be taken in addition to the 124 hours required for the liberal arts degree. For Fine Arts majors only.

	semester hours
Required Courses	9
F.A. 3900 Introduction to Art Education I	2
F.A. 3901 Introduction to Art Education II	3
F.A. 4900 Principles and Techniques of Art Education	4
Electives <i>one course in each of the following three groups:</i>	9
Ed. Psy. 3801 Educational Psychology	
Ed. Psy. 3802 Educational Psychology of the Disadvantaged Urban Child	
Ed. Psy. 4801 Group Dynamics, Principles and Applications	3
Psy. 2000 Child Psychology	
Psy. 2010 Psychology of Adolescence	3
E.P.S. 4210 History of Education	
E.P.S. 4220 Philosophy of Education	
E.P.S. 4230 Education and Social Change	
E.P.S. 4240 Comparative Education	
E.P.S. 4250 Urban Education	
E.P.S. 4270 Social-Psychological Issues and the American Teacher	3

Studio Major Visual Communications Option

The Studio Major-Visual Communications Option provides the student with general background in fine arts and emphasizes those areas which are appropriate to commercial art. When taken in conjunction with the Collateral Program in Visual Communications, it enables the student to acquire professional depth and actual apprenticeship experience in the field.

	semester hours
GENERAL EDUCATION REQUIREMENTS (see page 27)	36
MAJOR REQUIREMENTS	33
F.A. 1100-1101 Design I and II	6
F.A. 1230 Drawing	3
F.A. 1800 Visual Communications Seminar	2
F.A. 2000 Visual Comprehensive (portfolio)	1
F.A. 3100 Lettering	3
F.A. 3110 Commercial Design I and II	6
F.A. 3200 Painting I	3
F.A. 3230 Life Drawing	3
F.A. 3270 Photography	3
F.A. 3740 Modern Art	3
ELECTIVES (see page 28)	55

Collateral Program in Visual Communications

	semester hours
Required Course	6
F.A. 4100 Communications Apprenticeship	6
Electives 5 courses selected from either Media or Graphics:	15
MEDIA	
F.A. 3170 Advanced Design	3
F.A. 3271 Advanced Photography	3
F.A. 3600-3601 Film-Making I and II	6
F.A. 3602 Film Documentary	3
F.A. 3670-3671 Television Production I and II	6
F.A. 3672 Experimental Television	3
Math. 1931 Computer Arithmetic Algorithms	3
GRAPHICS	
F.A. 3104 Typography	3
F.A. 3120 Display	3
F.A. 3170 Advanced Design	3
F.A. 3201 Painting II	3
F.A. 3240 Illustration	3
F.A. 3260-3261 Printmaking I and II	6
F.A. 3271 Advanced Photography	3
I.S. 1600 Elements of Graphics	2

Major in Art History

semester hours

GENERAL EDUCATION REQUIREMENTS (see page 27) 36

MAJOR REQUIREMENTS 30

Required Courses

F.A. 1100-1101 Design I and II	6	18
F.A. 1700-1701 Art History I and II	6	
F.A. 3800 Philosophy of Art	3	
F.A. 4700 Problems in Art History	3	

Major Electives

Any four courses in Art History exclusive of those required above. 12

ELECTIVES (see page 28) 58

General and Introductory

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F.A. 1000-1003 Introduction to Art (3)

Staff

Appreciation, analysis and creation in the visual arts. Exploration of materials, tools and processes. Credit granted for one option only. Not for fine arts majors. Studio emphasis as follows:

F.A. 1000 Introduction to Art — Various Media

F.A. 1001 Introduction to Art — Painting and Drawing

F.A. 1002 Introduction to Art — Printmaking and Drawing

F.A. 1003 Introduction to Art — Sculpture

F.A. 2000 Visual Comprehensive Portfolio (1)

Coon

A review of the student's progress in art, in which he designs and produces a display of his own work. Evaluation by art faculty. For F.A. majors only.

F.A. 4000 Independent Study in Fine Arts (3,3)

Staff

Independent projects or research in a specific field of interest, by arrangement with a sponsoring professor. May be repeated for credit.

Prerequisite: Permission of the Instructor.

Design

F.A. 1100-1101 Design I and II (3,3)

Staff

Introductory studio course for Fine Arts major. The structuring of visual elements, leading to personal expression and artistic awareness. The first semester deals with the two-dimensional media, while three-dimensional media will be covered in the second.

F.A. 1100 is prerequisite to F.A. 1101.

F.A. 3100 Lettering (3)

Holloway

A studio course to develop skill in lettering. The letter, treated as an art form, is examined in terms of its historical development and contemporary uses.

Prerequisite: F.A. 1101.

F.A. 3104 Typography (3)

Staff

Projects in typography as related to graphic design and to the individual's expression of graphic ideas, using practical and experimental methods in their production.

Prerequisite: F.A. 3100.

F.A. 3110-3111 Commercial Design I and II (3,3)

Holloway

Conceptual problems in contemporary visual communications through studio projects that examine rough and comprehensive layout, lettering and idea development in commercial art. Two and three-dimensional work with specialized materials using advanced concepts of design. Includes professional preparation of art work.

Prerequisites: F.A. 3100, F.A. 3110 is prerequisite to F.A. 3111.

F.A. 3120 Display (3)

Coon

A studio course dealing with the techniques of display and presentation. Individual experimental approaches utilizing the newer methods and materials.

Prerequisite: F.A. 3100.

F.A. 3150 Design and the Urban Environment (3)

Buchner, Topper

Physical and aesthetic problems of the city environment — its growth, planning, housing, transportation and other facilities. Studio approach to the solution of regional planning problems.

F.A. 3160 Art and the Home (3)

Buchner, Markholm

Studio and field experience related to the design of housing and home interiors to meet the living needs of today. Historic and contemporary building forms as expressions of the individual and the society.

F.A. 3170 Advanced Design (3)

Staff

Advanced studies and assignments in the creative use of color and design and their relationships involving a wider range of materials and processes.

Prerequisite: F.A. 1101.

F.A. 4100 Communications Apprenticeship (6)

Holloway

An apprenticeship in the field, designed to educate the student to the actual applied activities and processes as they are utilized in a professional atmosphere. Seniors only. (Taken in excess of the 124 hours required for graduation).

Prerequisites: 33 required credits from the visual communications option and departmental approval.

Two-Dimensional Media

F.A. 1230 Drawing (3) Staff

Materials and methods in drawing, with emphasis on personal vision and expression. Historic development of style in drawing.

F.A. 3200 Painting I (3) Staff

Studio course in design and expression in the media of painting, dealing with both traditional and experimental methods.

Prerequisite: F.A. 1230.

F.A. 3201 Painting II (3) Staff

A studio course for the more advanced student of painting. The emphasis is directed toward developing the individual's form of expression in painting.

Prerequisite: F.A. 3200.

F.A. 3230 Life Drawing (3) Staff

A study of human form through drawing from life. The human form in the expression of other cultures and our own.

Prerequisite: F.A. 1230.

F.A. 3240 Illustration (3) Staff

Individual explorations and techniques used in reportage, merchandising, and story illustration requiring professional solutions.

Prerequisites: F.A. 3200 and F.A. 3230.

F.A. 3260 Printmaking: Relief and Intaglio (3) Metzger, Pierro

Studio course with concentration on the processes of relief and intaglio printing. Original images and concepts through a variety of techniques.

Prerequisite: F.A. 1230.

F.A. 3261 Printmaking: Lithography and Screen Printing (3) Metzger

Studio course with concentration on the processes of lithography and screen printing (serigraphy). Original images and concepts through a variety of techniques.

Prerequisite: F.A. 1230.

F.A. 3270 Photography (3) Tatton

Basic photography, including exposure, developing, printing, and enlarging. Historic and contemporary forms in photography.

F.A. 3271 Advanced Photography (3) Tatton

Advanced photograph techniques and equipment are explored with an emphasis toward individual expression and experimentation.

Prerequisite: F.A. 3270.

F.A. 4200 Advanced Painting (3) Giacalone

Continuation of the experiences of F.A. 3201 on an individualized basis.

Prerequisite: F.A. 3201.

Sculpture

F.A. 3300-3301 Sculpture I and II (3,3) Staff

A studio course in the materials and methods of sculpture, emphasizing individual selection and expression. Contemporary styles in sculpture related to historic forms.

Prerequisite: F.A. 1230, F.A. 1101 or F.A. 3400. F.A. 3300 is prerequisite to F.A. 3301.

F.A. 4300 Advanced Sculpture (3) Nicolescu, Victoria

Continuation of the experiences of F.A. 3301 on an individualized basis.

Prerequisite: F.A. 3301.



Crafts

F.A. 3400-3401 Ceramics I and II (3,3)

Jones

Three-dimensional form as it relates to clay. Deals with hand-building, potters wheel, surface treatment, chemical and physical properties of clay and glazes. Ceramics as an art form.

Prerequisite: F.A. 3400 is prerequisite to F.A. 3401.

F.A. 3430 Jewelry I (3)

Goodwin

Introductory studio course which explores design and construction of jewelry. Basic forming methods are covered, as well as methods of relating other materials to metal. Jewelry and metal design as an art form in our own time and in selected historic periods.

Prerequisite: F.A. 1000 or F.A. 1101.

F.A. 3431 Jewelry II (3)

Goodwin

Intermediate studio course continuing the work of F.A. 3430. Study of more advanced techniques, such as centrifugal casting, enamelling, electroplating, niello and lapidary.

Prerequisite: F.A. 3430.

F.A. 3460 Introduction to Textiles (3)

Markholm

Introductory studio course in textiles as an art form. Weaving, knotting, applied decoration, study of fibers. Historical development and contemporary forms in textiles.

Prerequisite: F.A. 1000 or F.A. 1101.

F.A. 3461 Textile Decoration (3)

Markholm

Materials and processes in textile decoration, treated in a more comprehensive manner than in F.A. 3460. Intended particularly for F.A. major students.

Prerequisites: F.A. 3460.

F.A. 3462 Weaving I (3)

Markholm

Studio course in the design and production of woven fabrics. Techniques in the use of primitive, table and floor looms. Fiber, color, and draft analysis.

Prerequisite: F.A. 3460.

F.A. 3463 Weaving II (3)

Markholm

Continuation of content introduced in F.A. 3462. Multi-harness looms and innovative techniques.

Prerequisite: F.A. 3462.

F.A. 3480 Furniture-Making (3)

Buchner

Designing and making furniture. Techniques of fabricating, joining and finishing. Integration of concept, material and process will be emphasized. Materials will include wood, metal, plastic and fiber.

F.A. 4400 Advanced Ceramics (3)

Jones

Continuation of the experiences of F.A. 3401 on an individualized basis. Professional quality in design and skill, clay preparation, glaze theory, firing, kiln construction.

Prerequisite: F.A. 3401.

F.A. 4430 Advanced Jewelry (3)

Goodwin

Continuation of the experiences of F.A. 3431 on an individualized basis. Techniques such as granulation, electroforming, forging, silversmithing; exotic materials and specialized equipment.

Prerequisite: F.A. 3431.

Museum Training

F.A. 3500 Museum Training: Theory (3)

Cohan

The functions of the museum. Aspects of professional museum work; collection, administration, education services.

Prerequisites: F.A. 1700, 1701 and 1101 or permission of instructor.

F.A. 3501 Museum Training: Practice (3)

Cohan

The application of the theory of museum training. Techniques of exhibition and curatorship, care of collections and connoisseurship. Introductory demonstrations in conservation for curators given in a technical laboratory.

Prerequisites: F.A. 1700, 1701, 1101 and 3500 or permission of instructor.

Film and Theater

I.S. 1600 Elements of Graphics (2)

Angebrandt

Experiences in the fundamentals of letterpress printing, screen process reproduction and offset lithography.

F.A. 3600-3601 Film-Making I and II (3,3)

Troy

Studio course dealing with design and expression in the medium of the film. Practical and aesthetic problems in the creation of the film.

Prerequisite: F.A. 1000 or F.A. 1101. F.A. 3600 is prerequisite to 3601.

F.A. 3602 Film Documentary (3)

Staff

Techniques of research involved in preparing for the filming of the documentary. Various film techniques are studied and explored in terms of the documentary.

Prerequisite: F.A. 3601.

F.A. 3650 Design for the Theater (3)

Burger

Techniques of scenery construction, management and lighting. Studio problems emphasizing play analysis. Historic development of stage setting types and the evolution of contemporary practices.

Prerequisite: F.A. 1000 or F.A. 1101.

F.A. 3660 School Theater and Puppetry (3)

Burger

Studio course dealing with the function of the theater in the school program. Basic set design, construction, and lighting; techniques of puppets and marionettes.

Prerequisite: F.A. 1000 or F.A. 1101.

F.A. 3670-3671 Television Production I and II (3,3)

Staff

Basic television production methods and techniques including such areas as television graphics, visual and aural effects, picture composition, settings and backgrounds, lighting and programming. Group productions and individually produced programs for the more advanced.

Prerequisites: F.A. 1101. F.A. 3670 is prerequisite to F.A. 3671.

F.A. 3672 Experimental Television (3)

Staff

The potential of the television medium is explored by the individual through a variety of treatments including the mechanical, theatrical, filmic, objective and subjective. The use of a variety of equipment for creative, experimental purposes.

Prerequisite: F.A. 3671.

Art History

F.A. 1700 Art History I (3)

Staff

Chronological study of important works of art from Prehistory to the Renaissance. Stylistic analysis and comparison. Relationship of the art form to its cultural setting.

F.A. 1701 Art History II (3)

Staff

Continuation of F.A. 1700, covering the period from the Renaissance to the modern world.

F.A. 3700 American Art (3)

Staff

American art from Colonial times to 1865. Major improvements and influences affecting the development of an American style.

F.A. 3710 Italian Renaissance Painting (3)

Lord

Italian painting of the fourteenth, fifteenth and sixteenth centuries.

F.A. 3720 Baroque Art (3)

Lord

European painting, sculpture, and architecture in the age of Rembrandt.

F.A. 3739 Nineteenth Century Art (3)

Stotz

From Romanticism to Impressionism and Post-Impressionism: a study of major works of art in painting, sculpture and architecture in 19th century Europe and America. Special study of the origins of major artistic trends of the modern world.

F.A. 3740 Modern Art (3)

Stotz

From Cubism to Abstract Expressionism. A study of important artists, works of art and stylistic movements in Europe and America from 1900 to 1960.

F.A. 3750 Far Eastern Art I (3)

Giacalone

Early Eastern art and cultures of China, Japan and the art of India.

F.A. 3751 Far Eastern Art II

Giacalone

The later art of the Far East with emphasis on the painting, sculpture and architecture of China and Japan.

F.A. 3760 Medieval Art (3)

Stotz

Architecture, painting, and sculpture of the Early Medieval, Romanesque, and Gothic periods.

F.A. 3770 Greek and Roman Art (3)

Wilber

Works of art from Archaic and Classical Greece, the Hellenistic Age and the Roman Republic and Empire.

F.A. 3780 The History of African Art (3)

Hill

A study of geographical, historical, and anthropological backgrounds of the people of Africa, south of the Sahara. In addition, the course will survey the art of the West Guinea coast and some North Central African states (Mali, Upper Volta, Liberia, Ivory Coast, Nigeria, Cameroons, and the Congo).

F.A. 4700 Problems in Art History (3)

Staff

Principles and problems in art history studied through independent research and group critique. Advanced level.

Prerequisite: Permission of Instructor.

Philosophy and Esthetics

F.A. 1800 Visual Communications Seminar (2)

Staff

A study of the media used in visual communications. A survey of information and advertising design, methods and processes: the interrelationships between the media and evaluations of their uses. For F.A. majors taking the visual communications option only.

F.A. 3800 Philosophy of Art (3)

Staff

Concepts of esthetics examined through readings and examination of art products. Prerequisites: One course in philosophy.

Art Education

F.A. 3900 Introduction to Art Education I (2)

Introductory field experience for students preparing to teach art. Course work involves participation as a teacher-aid in a public school classroom. Observation of teaching procedures, work with small groups, evaluation of programs. Jr. year/fall.

F.A. 3901 Introduction to Art Education II (3)

Greenberg, Lipscomb, Jochnowitz

The nature and function of the visual arts in education, grades 1 through 12. Materials and methods, curriculum organization, principles and practices of teaching, classroom management, and the role of the art teacher in the total school program. Jr. year/spring. Prerequisite: F.A. 3900.

F.A. 3910 Art in Education (3)

Staff

Understanding the child's natural modes of expression, selection of media to develop this expression, and finding ways of teaching in the elementary school which will increase aesthetic awareness, develop skills, enrich experience, and invite expression. Not intended for Fine Arts majors.

F.A. 3920 Art in Early Childhood Education (3)

Cade

Content similar to that of F.A. 3910 but dealing with children of the nursery school age through the third grade. Not intended for Fine Arts majors.

F.A. 4900 Principles and Techniques of Art Education (4)

Staff

Taught concurrently with the student teaching assignment. Functions as a guide for the field experience in the areas of classroom teaching and the role of the art program in the total school curriculum.

Prerequisite: F.A. 3901.

F.A. 4950 Problems in Art Education (3)

Staff

Principles and practices in art education studied through individual research and group critique.

Prerequisite: F.A. 3901.

F.A. 4990 Student Teaching in Fine Arts (8)

Greenberg, Staff

Experience in fulltime teaching in a public school under the guidance and direction of a cooperating teacher and a college supervisor.

Prerequisites: F.A. 3901 and departmental approval. Must be taken in conjunction with F.A. 4900.

Faculty: Aleman, Bauer, Edreira, Ek Dahl, Feito, Markle, Myers, Portuondo, Rodriguez, Salins, Socarras, Torres, Wendell (Chairman)

Major in Spanish

	semester hours	
GENERAL EDUCATION REQUIREMENTS (see page 27)		
MAJOR REQUIREMENTS		30
Required Courses		6
Sp. 3100 Advanced Spanish Composition	3	
Sp. 3105 Advanced Spanish Conversation	3	
Major Electives selected from the upper division (3000-4000 level) Spanish courses		24
ELECTIVES (see page 28)		124

Collateral Program in Secondary Education Students who wish to teach Spanish in secondary schools must also complete the Collateral Program in Secondary Education for a foreign languages certification.

*Major in French

	semester hours	
GENERAL EDUCATION REQUIREMENTS (see page 27)		36
MAJOR REQUIREMENTS		30
Required Courses		6
Fr. 3100 Advanced French Composition	3	
Fr. 3105 Advanced French Conversation	3	
Major Electives selected from the upper division (3000-4000 level) French courses		24
ELECTIVES (see page 28)		124

*Pending approval of the State Board of Higher Education

Collateral Program in Secondary Education Students who wish to teach French in secondary schools must also complete the Collateral Program in Secondary Education for a foreign languages certification.

Minor in French

	semester hours	
Required Courses		6
Fr. 3100 Advanced French Composition	3	
Fr. 3105 Advanced French Conversation	3	
Electives selected from the upper division (3000-4000 level) French courses		12
		18

French Language

Fr. 1101-1102 Elementary French (6) Staff
Designed to enable the student to achieve a ready comprehension of spoken French and ability to express himself in clear, simple sentences, and considerable ease in reading French. Credit given only upon completion of both semesters.

Fr. 2102-2102 Intermediate French (6) Staff
Designed to expand the student's competence and fluency in speaking, understanding, reading and writing French, and to acquaint the student with various aspects of the literature and culture of France. Credit given only upon completion of both semesters.
Prerequisite: Fr. 1102 or permission of the instructor.

Fr. 3100 Advanced French Composition (3) Myers
An intensive review of grammar and study of the problems of written composition in the French language.
Prerequisite: Fr. 2102 or permission of the instructor.

Fr. 3105 Advanced French Conversation (3) Myers
Intensive concentration on vocabulary building, pronunciation, diction, phonetics, through oral discussions.
Prerequisite: Fr. 2102 or permission of the instructor.

Fr. 3110 Commercial French (3) Staff
Designed to acquaint the student with mercantile practices, documents and terminology needed for the understanding of the business usages of French speaking countries. Course conducted in French.
Prerequisite: Fr. 2102 or permission of the instructor.

Fr. 4100 French Grammar: Morphology and Syntax (3) Staff
An in-depth study of the morphological and structural features of French grammar with special emphasis on those areas of interference with the English language that present the greatest difficulties to the student of French.
Prerequisite: Fr. 3100 or permission of the instructor.

Fr. 4105 Translation (French-English) (3) Staff
Designed to teach the student the basic techniques of oral, literal and literary translation from French into English and from English into French.
Prerequisite: Fr. 3100 or permission of the instructor.

Survey

Fr. 3200 Masterpieces of French Literature I (3) Staff
Reading, interpretation and analysis of selected texts in French literature, from medieval times. Course conducted in French.
Prerequisite: Fr. 2102 or permission of the instructor.

Fr. 3205 Masterpieces of French Literature II (3) Staff
Continuation of Fr. 3200.
Prerequisite: Fr. 2102 or permission of the instructor.

Fr. 3210 French Civilization I (3) Markle
An illustrated lecture course on the culture and civilization of France from the Middle Ages to modern times. Emphasis on geography, history, arts and letters, economic and social problems, philosophy and education. Conducted in French.
Prerequisite: Fr. 2102 or permission of the instructor.

Fr. 3215 French Civilization II (3) Markle
Continuation of Fr. 3210, with emphasis on the nineteenth and twentieth centuries.
Prerequisite: Fr. 2102 or permission of the instructor.

Periods

Fr. 4300 French Medieval Literature (3) Staff
A study of selected works illustrating the development of French literature from its first manifestations to the fifteenth century. Course conducted in French.
Prerequisite: Fr. 2102 or permission of the instructor.

Fr. 4305 French Literature of the Renaissance (3) C. Wendell
A study of selected readings illustrating the evolution of the literary esthetics of the sixteenth century. Course conducted in French.
Prerequisite: Fr. 2102 or permission of the instructor.

Fr. 4310 The Classical Age (3) Markle
A study of selected works illustrating the classical literary movement of the seventeenth century and its impact on all subsequent writers. Course conducted in French.
Prerequisite: Fr. 2102 or permission of the instructor.

Fr. 4315 The Age of Enlightenment (3) Staff
Introduction to eighteenth century French literature with emphasis on the participation of Montesquieu, Voltaire, Diderot and Rousseau in the intellectual and aesthetic currents of the period. Conducted in French.
Prerequisite: Fr. 2102 or permission of the instructor.

Fr. 4320 Twentieth Century French Literature (3) Bauer
An exploratory study of the novel, poetry and theater in France during the twentieth century. Course conducted in French.
Prerequisite: Fr. 2102 or permission of the instructor.

Genres

Fr. 4400 Introduction to the History of French Drama (3) Bauer
The major developments of French dramatic literature from its origins to the present times, studied through the most representative plays of the various periods. Conducted in French.
Prerequisite: Fr. 2102 or permission of the instructor.

Fr. 4405 The French Novel (3) C. Wendell
In-depth study and analysis of the narrative techniques and informing ideas of representative novels of the major French literary periods. Course conducted in French.
Prerequisite: Fr. 2102 or permission of the instructor.

Fr. 4410 The Poetry of France (3) C. Wendell
Study of the form and content in the French poetic tradition, analysis of selected poems, representative of significant formal and thematic developments. Course conducted in French.
Prerequisite: Fr. 2102 or permission of the instructor.

Themes

Fr. 4600 Pre-Romanticism and Romanticism (3) Staff
Reading, analysis and interpretation of the poetry, drama and novel of the pre-romantic and romantic period. Course conducted in French.
Prerequisite: Fr. 2102 or permission of the instructor.

Fr. 4605 Realism and Naturalism (3) Staff
A study of the movement of ideas, the evolution of literary esthetics and the material and scientific progress of the French society in the second part of the nineteenth century. Course conducted in French.
Prerequisite: Fr. 2102 or permission of the instructor.

Seminars and Independent Study

Fr. 4700 Seminar in French Literature (3) Staff
A carefully delimited, concentrated study of a single author, genre, theme, literary technique or problem as selected by the instructor. Course conducted in French. Open only to seniors.
Prerequisites: Fr. 3100 and Fr. 3105 or permission of the instructor.

Fr. 4710 Independent Study in French Language or Literature (3) Staff
The opportunity for students of advanced ability on any level of matriculation to pursue in a concentrated, but informal manner a specific area of study in foreign language or literature not available through current course offerings with a member of the department's faculty. The maximum opportunity for student initiative and individual attention.
Prerequisite: Fr. 3100 or permission of instructor.

German Language

Ger. 1101-1102 Elementary German I and II (6) Staff
Designed to enable the student to achieve a ready comprehension of spoken German, an ability to express himself in clear, simple sentences and considerable ease in reading German. Credit given only upon completion of both semesters.

Ger. 2101-2102 Intermediate German I and II (6) Staff
Designed to expand the student's competence and fluency in speaking, understanding, reading and writing German, and to acquaint the student with various aspects of the literature and culture of Germany. Credit for graduation given only upon completion of both semesters.
Prerequisite: Gr. 1102 or permission of the instructor.

Ger. 2108 Scientific German (3) Staff
Designed to enable the student to read books and articles in the fields of natural and social sciences. May be taken in lieu of Gr. 2102.
Prerequisite: Gr. 2101 or permission of the instructor.

Ger. 3100 Advanced German Conversation and Composition I (3) Salins
Intensive practice in spoken and written German, stressing verbal fluency, accurate and idiomatic expression. Discussions and compositions based on selected readings in the various areas of German culture.
Prerequisite: Gr. 2102 or permission of the instructor.

Ger. 3105 Advanced German Conversation and Composition II (3) Salins
A continuation of Gr. 3100.
Prerequisite: Gr. 2102 or permission of the instructor.

Survey

Ger. 3200 Masterpieces of German Literature I (3) Staff
Reading, interpretation and analysis of selected texts of representative authors of the German literature. Course conducted in German.
Prerequisite: Gr. 2102 or permission of the instructor.

Ger. 3205 Masterpieces of German Literature II (3) Staff
A continuation of Gr. 3200.
Prerequisite: Gr. 2102 or permission of the instructor.

Ger. 3210 German Civilization I (3) Staff
An illustrated lecture course on the cultural and social history of Germany from the Reformation to Romanticism. Conducted in German.
Prerequisite: Gr. 2102 or permission of the instructor.

Ger. 3215 German Civilization II (3) Staff
Continuation of Gr. 3210, with emphasis on the nineteenth and twentieth centuries. Conducted in German.
Prerequisite: Gr. 2102 or permission of the instructor.

Independent Study

Ger. 4710 Independent Study in German Language or Literature (3) Staff
The opportunity for students of advanced ability on any level of matriculation to pursue in a concentrated, but informal manner a specific area of study in foreign language or literature not available through current course offerings with a member of the department's faculty. The maximum opportunity for student initiative and individual attention.
Prerequisite: Gr. 3100 or 3105 or permission of instructor.

Spanish Language

Sp. 1101-1102 Elementary Spanish I and II (6) Staff
Designed to enable the student to achieve a ready comprehension of spoken Spanish, an ability to express himself in a clear simple sentences, and considerable ease in reading Spanish. Credit given only upon completion of both semesters.

Sp. 2101-2102 Intermediate Spanish I and II (6) Staff
Designed to expand the student's competence and fluency in speaking, understanding, reading and writing Spanish, and to acquaint the student with Spain and the Spanish way of life. Credit for graduation given only upon completion of both semesters.
Prerequisite: Sp. 1102 or permission of the instructor.

Sp. 3100 Advanced Spanish Composition (3) Portuondo
An intensive review of grammar and study of the problems of written composition in the Spanish language.
Prerequisite: Sp. 2102 or permission of the instructor.

Sp. 3105 Advanced Spanish Conversation (3) Portuondo
Intensive concentration in vocabulary building, pronunciation, diction, phonetics, through oral discussions.
Prerequisite: Sp. 2102 or permission of the instructor.

Sp. 3110 Commercial Spanish (3) Staff
Designed to acquaint the student with the mercantile practices, documents and terminology needed for the understanding of the business usages of the Spanish speaking countries. Course conducted in Spanish.
Prerequisite: Sp. 2102 or permission of the instructor.

Sp. 3115 Spanish Phonetics (3) Aleman
An in-depth study of Spanish Phonetics, covering certain necessary aspects of historical phonetics.
Prerequisite: Sp. 3100 and Sp. 3105 or permission of the instructor.

Sp. 4100 Spanish Grammar: Morphology and Syntax (3) Socarras
An in-depth study of the most important morphological and structural features of Spanish grammar with special emphasis in those areas of interference with the English language that present the greatest difficulties to the student of Spanish.
Prerequisite: Sp. 3100 or permission of the instructor.

Sp. 4105 Translation (Spanish-English) (3) Staff
Designed for the instruction of useful techniques in translation and interpretation from Spanish into English and English into Spanish.
Prerequisite: Sp. 3100 or permission of the instructor.

Survey

Sp. 3200 Masterpieces of Spanish Literature I (3) Staff
Reading, interpretation and analysis of selected texts in Spanish literature, from medieval to modern times. Conducted in Spanish.
Prerequisite: Sp. 2102 or permission of the instructor.

Sp. 3205 Masterpieces of Spanish Literature II (3) Staff
Continuation of Sp. 3200.
Prerequisite: Sp. 2102 or permission of the instructor.



Sp. 3210 Spanish Civilization I (3) Staff
An illustrated lecture course on the culture and civilization of Spain, from the Middle Ages to the Renaissance. Emphasis will be placed on history, geography, arts and letters, economic and social problems, philosophy and education. Conducted in Spanish.
Prerequisite: Sp. 2102 or permission of the instructor.

Sp. 3215 Spanish Civilization II (3) Staff
A continuation of Spanish Civilization I. Deals with the Spanish history and culture from the Renaissance to present day Spain. Course conducted in Spanish.
Prerequisite: Sp. 2102 or permission of the instructor.

Sp. 3220 Colonial Spanish-American Literature (3) Staff
Reading, interpretation and analysis of selected authors and texts in Colonial Spanish-American Literature from its origins to 1832. Course conducted in Spanish.
Prerequisite: Sp. 2102 or permission of instructor.

Sp. 3225 Latin-American Civilization (3) Staff
An illustrated lecture course on the culture of Latin America, from the discovery to modern times. Emphasis placed on history, geography, arts and letters, economic and social problems, philosophy and education. Conducted in Spanish.
Prerequisite: Sp. 2102 or permission of the instructor.

Periods

Sp. 4300 Spanish Medieval Literature (3) Socarras
A study of selected works illustrating the development of Spanish literature from its first manifestations to the 15th century. Includes both prose and poetry, introducing the studying to old Spanish texts. Course conducted in Spanish.
Prerequisite: Sp. 2102 or permission of the instructor.

Sp. 4305 Literary Currents in Nineteenth Century Spain (3) Staff
Reading, interpretation and analysis of selected authors and texts in 19th century Spain, with an in-depth study of the major literary movements during that period. Course conducted in Spanish.
Prerequisite: Sp. 2102 or permission of the instructor.

Sp. 4310 The Generation of '98 (3) Staff
A study of selected works of the Generation of '98 through the analysis of representative authors. Course conducted in Spanish.
Prerequisite: Sp. 2102 or permission of the instructor.

Sp. 4315 Twentieth Century Literature in Spain (3) Staff
Reading, interpretation and analysis of selected authors and texts in twentieth century literature in Spain. Course conducted in Spanish.
Prerequisite: Sp. 2102 or permission of the instructor.

Genres

Sp. 4400 Spanish Renaissance and Baroque Theatre (3) Staff
A study of the Spanish theater during the Golden Centuries, through the analysis of representative plays and authors. Course conducted in Spanish.
Prerequisite: Sp. 2102 or permission of the instructor.

Sp. 4405 Spanish Renaissance and Baroque Prose (3) Socarras
A study of the prose of Spain during the Golden Centuries through the analysis of representative works of the most important plays and authors. Course conducted in Spanish.
Prerequisite: Sp. 2102 or permission of the instructor.

Sp. 4410 Spanish Renaissance and Baroque Poetry (3) Staff
A study of the poetry of Spain during the Golden Centuries through the analysis of representative works of the most important poets. Course conducted in Spanish.
Prerequisite: Sp. 2102 or permission of the instructor.

Sp. 4415 The Spanish-American Novel (3) Feito
A study of the main novelistic currents in Spanish-America from its origins to the twentieth century. Course conducted in Spanish.
Prerequisite: Sp. 2102 or permission of the instructor.

Sp. 4420 Twentieth Century Spanish-American Poetry (3) Rodriguez
Reading, interpretation and analysis of selected authors and texts from post-modernism to present times. Course conducted in Spanish.
Prerequisite: Sp. 2102 or permission of the instructor.

Sp. 4425 Essay in Spanish-American Literature (3) Edreira
A study of this genre from its beginning to the present, through the analysis of representative authors. Course conducted in Spanish.
Prerequisite: Sp. 2102 or permission of the instructor.

Figures

Sp. 4500 Cervantes (3) Staff
In-depth study and analysis of the literary techniques of Cervantes and of his most representative works. Course conducted in Spanish.
Prerequisite: Sp. 2102 or permission of the instructor.

Themes

Sp. 4600 Modernism (3) Staff
A study of the origins and development of Modernism through the analysis of representative authors. Course conducted in Spanish.
Prerequisite: Sp. 2102 or permission of the instructor.

Sp. 4605 Literature Gauchesca (3) Staff
A study of selected works illustrating the development of the "gaucho" literature from its first manifestations to the twentieth century. Course conducted in Spanish.
Prerequisite: Sp. 2102 or permission of the instructor.

Seminar and Independent Study

Sp. 4700 Seminar in Spanish Literature (3) Staff
A carefully delimited, concentrated study of a single author, genre, theme, literary technique or problem, as selected by the instructor. Course conducted in Spanish and limited to seniors.
Prerequisites: Sp. 3100 and Sp. 3105 or permission of the instructor.

Sp. 4710 Independent Study in Spanish Language or Literature (3) Staff
The opportunity for students of advanced ability on any level of matriculation to pursue in a concentrated, but informal manner a specific area of study in foreign language or literature not available through current course offerings with a member of the department's faculty. The maximum for student initiative and individual attention.
Prerequisite: Sp. 3100 or permission of the instructor.

Faculty: Andzel, Bakker, Benson (Chairman), Cummings, Darden, Errington, Holden, Karbe, Krueger, Persinger, Raksanyi, Resnick, Rich, Ridinger, Ramoth, Schmidt, Schwartz, Scuderi, Shiposh, Smith, Stulb, Thigpen, Venezia, Zweidinger.

Major in Physical Education

This major program in physical education is designed to provide professional preparation for men and women. The certification of graduates will permit them to teach grades K-12, to develop and organize quality intramural programs in both elementary and secondary schools and to provide highest levels of coaching in interscholastic athletics. Each major student is required to satisfactorily complete a personal competency assessment program within his first year as a full-time student. A sixty-five hour group work requirement in the major may be fulfilled through camp counselling, teaching, playground and recreation leadership, coaching, etc. before entering the junior year.

	semester hours
GENERAL EDUCATION REQUIREMENTS (see page 27)	36
Required Cognate Courses	
<i>Within the Humanities Cluster:</i>	
Eng. 1900 Speech	3
<i>Within the Sciences and Mathematics Cluster:</i>	
Bio. 1000 Principles of Biology	4
<i>Within the Social and Behavioral Sciences and History Cluster:</i>	
Psy. 1000 General Psychology	3
Psy. 2100 Child Psychology	3
Soc. 1000 Sociology	3
ADDITIONAL COGNATE COURSES	9
<i>Selected from Cluster I, II and/or in General Education Requirements to include:</i>	
Bio. 2402 Human Anatomy and Physiology	

MAJOR REQUIREMENTS

Required Courses	46	60
Ed. Psy. 3801 Educational Psychology	3	
One course in Foundations: E.P.S. 4210-4270	3	
H.Ed. 3233 Methods and Materials of Health Education in Elementary and Secondary Schools	2	
H.Ed. 4231 First Aid	2	
P.Ed. 1551 Introduction to Physical Education	2	
P.Ed. 1561 Motor Learning and Bio-Mechanics of Movement	1	
P.Ed. 2592 Camping	3	
P.Ed. 3543 Physical Education Curriculum I	4	
P.Ed. 3544 Physical Education Curriculum II	5	
P.Ed. 3577 Kinesiology	3	
P.Ed. 3578 Physiology of Exercise	3	
P.Ed. 4500 Student Teaching	8	
P.Ed. 4551 Adaptive Physical Education	2	
P.Ed. 4554 Organization, Administration and Supervision of Health and Physical Education	3	
P.Ed. 4555 Evaluation in Physical Education	2	
*Required for Men		9
P.Ed. 2421 Dance I	1	
P.Ed. 2522 Dance II	2	
P.Ed. 2560 Professional Applications I	2	
P.Ed. 2561 Professional Applications II	2	
P.Ed. 2562 Professional Applications III	2	
P.Ed. 3524 Care and Prevention of Athletic Injuries	2	
*Required for Women		9
P.Ed. 2521 Dance I	1	
P.Ed. 2522 Dance II	1	
P.Ed. 2563 Individual Sports I	1	
P.Ed. 2568 Gymnastics I	1	
P.Ed. 2577 Team Sports I	1	
P.Ed. 3569 Gymnastics II	1	
P.Ed. 3574 Individual Sports II	1	
P.Ed. 3579 Team Sports II	1	
P.Ed. 4568 Team Sports III	1	
Major Electives selected with departmental advisement	6	
ELECTIVES (see page 28)		23

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*Subject to revision, fall 1973. Consult department for advisement.

Minor in Urban and Outdoor Recreation

The Minor in Outdoor and Urban Recreation prepares students for careers in recreation programs associated with education, industry, medical services and community institutions of both private and public nature.

	semester hours	
Required Courses		18
P.Ed. 1431 Outing	1	
P.Ed. 2563 Individual Sports	2	
P.Ed. 2800 Camping	3	
P.Ed. 2901 Foundations of American Recreation	3	
P.Ed. 2910 Program Organization and Facility Design	3	
P.Ed. 3800 Environmental Reconnaissance	3	
P.Ed. 4900 Individual and Group Leadership Skills	3	

Minor in Health Education

	semester hours	
Required Courses		10
H.Ed. 1100 Healthful Living	2	
H.Ed. 3233 Methods and Materials for Teaching Health Education in Elementary and Secondary Schools	2	
H.Ed. 4231 First Aid	2	
Bio. 2402 Human Anatomy and Physiology	4	
Electives		8
H.Ed. 3235 Introduction to Public Health	2	
H.Ed. 3237 The School and Community Health Program	2	
H.Ed. 3238 Mental Health	2	
H.Ed. 3336 Safety Education	2	
H.Ed. 4243 Health Counseling	2	
H.Ed. 4234 Sex Education	3	
H.Ed. 4333 Alcohol and Narcotics Education	2	
		18

Provision is made for professional laboratory experiences in health education in senior student teaching.

Health Education

H.Ed. 1100 Healthful Living (2)

Staff

A background of scientifically accurate health information, realistic criticism of various panaceas, and emphasis on positive health through planning and practicing a wholesome program of living. The course furnishes experiences for the student to find out about himself and his health needs and to act accordingly.

H.Ed. 2231 First Aid and Accident Prevention (2)

Staff

An investigation of accident prevention plus the theory and practice of First Aid as recommended by the American Red Cross. At the successful completion of this course, the student receives an advanced Red Cross first aid certificate.

H.Ed. 3233 Methods and Materials of Health Education in Elementary and Secondary Schools (2)

Staff

Planning health instruction for pupil needs, teaching techniques which are most effective, and material aids to learning.

H.Ed. 3235 Introduction to Public Health (2)

Staff

Prevention, sociological and anthropological aspects, planning, and organization of community health problems and programs.

H.Ed. 3237 The School and Community Health Program (2)

Staff

The school and community health program, the teacher's role in school and community health services, healthful school environment, and health instruction in the elementary school.

H.Ed. 3238 Mental Health (2)

Staff

The meaning and importance of mental health, dynamics of adjustment, and application of mental health principles.

H.Ed. 3336 Safety Education (2)

Zweidinger

Designed to develop knowledge and attitudes relating to safety. Special problems related to the school and the teacher's responsibility studied.

H.Ed. 4231 First Aid (2)

Staff

A lecture and demonstration course designed to teach the principles and content of first aid. The opportunity is given the student to obtain the Standard, Advanced and Instructor's First Aid Certificate. For physical education majors only.

H.Ed. 4232 Health Counseling (2)

Staff

Physical, mental, emotional, and social health problems of elementary and secondary school pupils, as well as remedial procedures and handling of confidential records.

H.Ed. 4234 Sex Education (3)

Staff

An overview of sex and sexuality in today's society, with implications for evolving male-female relationships, dating patterns, marriage and responsible parenthood. Special attention and emphasis given to the role and responsibility of the schools in educating for sexuality.

H.Ed. 4333 Alcohol and Narcotics Education (2)

Staff

A comprehensive course dealing with alcoholic beverages, narcotics, and other addicting and habit-forming drugs, and the effect of their usage upon the individual and society.



Physical Education Activity

An opportunity for the student to develop skills in sports and dance. The techniques, strategies, knowledge and appreciation of the various activities are taught. Many of the activities are co-educational.

P.Ed. 1401 Archery (1)	Persinger
P.Ed. 1402 Badminton (1)	Bakker
P.Ed. 1403 Badminton-Softball (1) men only	Andzel
P.Ed. 1404 Basketball-Golf (1) men only	Ridinger
P.Ed. 1405 Basketball-Track and Field (1) women only	Staff
P.Ed. 1406 Bowling (1)	Bakker
Off campus, lab fee of \$10. Students provide own transportation.	
P.Ed. 1407 Conditioning Activities (1) men only	Andzel
P.Ed. 1408 Conditioning Activities (1) women only	Ridinger
P.Ed. 1409 Fencing (1)	Thigpen
P.Ed. 1410 Field Hockey-Table Tennis (1) women only	Venezia
P.Ed. 1411 Beginning Folk Dance (1)	Schmidt
P.Ed. 1412 Golf I (1)	Staff
P.Ed. 1413 Golf II (1)	Staff
Prerequisite: P.Ed. 1412 or permission of instructor.	
P.Ed. 1414 Golf-Lacrosse (1) women only	Venezia
P.Ed. 1416 Beginning Gymnastics (1)	Ridinger
P.Ed. 1417 Beginning Modern Dance (1)	Schwartz
P.Ed. 1418 Swim I (Beginning Swimming) (1)	Staff
Open only to those who cannot swim two pool lengths (50 yards). Designed to provide a feeling of safety in deep water and ability to do a 1-minute support and to swim a minimum of two pool lengths using two different strokes in two different positions.	
P.Ed. 1419 Swim II Intermediate Swimming (1)	Staff
Seven basic swimming strokes, beginner's diving, water games, stunts and basic safety skills. Prerequisite: P.Ed. 1418 or having passed the swimming test.	
P.Ed. 1420 Swim III Advanced Swimming and Diving (1)	Staff
Synchronized swimming, diving and snorkling. Equipment: snorkel, mask and fins. Prerequisite: P.Ed. 1419; ability to swim in front and back crawl, breast and side stroke in comfortable combination for 10 minutes in deep water.	
P.Ed. 1421 Red Cross Senior Life Saving (1)	Holden, Karbe
Successful completion recognized by Red Cross Certification. Equipment: snorkel, mask, fins. Prerequisite: Jr. Life Saving Certificate or equivalent or ability to swim ten minutes using six different strokes with ease.	
P.Ed. 1423 Tennis I (1)	Staff
P.Ed. 1424 Tennis II (1)	Staff
Prerequisite: P.Ed. 1423 or permission of instructor.	
P.Ed. 1425 Touch Football-Badminton (1) men only	Andzel
P.Ed. 1426 Volleyball (1)	Thigpen
P.Ed. 1427 Wrestling-Weight Training (1)	Andzel
P.Ed. 1428 Adapted Physical Education Activities I (1)	Stulb
P.Ed. 1429 Adapted Physical Education Activities II (1)	Stulb
Continuation of P.Ed. 1428.	

P.Ed. 1430 Golf-Basketball (1) women only	Staff
P.Ed. 1431 Outing (1)	Cummings
An exposure to the various activities which comprise the broad field of out-door recreation. Includes instruction and participation. A varying laboratory fee covering materials and usage of off-campus facilities required. May be repeated or replaced by P.Ed. 2563.	
P.Ed. 1432 Beginning Gymnastics (1) men only	Karbe

Professional — Physical Education

P.Ed. 1551 Introduction to Physical Education (2)	Schmidt
An overview of the many facets of physical education as a part of the school curriculum including purposes, objectives, and history of physical education. The present status of physical education according to the most recent research. The student considers philosophical differences in physical education and develops a working philosophy in physical education as it relates to general education and his own personal philosophy.	
P.Ed. 1561 Motor Learning and Bio-Mechanics of Movement (1)	Andzel
The physiological factors, principles and performance conditions affecting motor learning. Analysis and classification of movement used in physical education activities.	
P.Ed. 2513 Coaching Football (2)	Andzel
Technique and strategy in the various styles of offense and defense. Interpretation of rules and regulations and psychology of coaching. Men only.	
P.Ed. 2515 Coaching Basketball (2)	Staff
The various systems of defense and offense in basketball. Interpretation of rules and regulations of psychology of coaching. Men only.	
P.Ed. 2517 Coaching Baseball (2)	Bakker
The strategy and fundamentals of baseball. Interpretation of rules and regulations and psychology of coaching. Men only.	
P.Ed. 2518 Officiating Men's Sports (2)	Staff
A study of rules, techniques and procedures for officiating team and individual sports. Students will be required to take at least one of the national officials rating examinations. Men only.	
P.Ed. 2521 Dance I (1)	Schmidt
Intensive course in techniques and materials of folk dance. Co-educational.	
P.Ed. 2552 Dance II (1)	Hurd
Intensive course emphasizing the spatial, rhythmic and dynamic aspects of contemporary dance as an art form and an educational force. Co-educational.	
P.Ed. 2560 Professional Applications I (2)	Staff
Fundamentals, rules, strategy, concepts and methods of teaching football, volleyball, basketball, and track and field. Prerequisite: Intermediate skill levels determined by assessment program.	
P.Ed. 2561 Professional Applications II (2)	Staff
Fundamentals, rules, strategy, concepts, and methods of teaching soccer, wrestling, tumbling and gymnastics, and physical fitness. Men only. Prerequisite: Intermediate skill levels determined by assessment program.	
P.Ed. 2562 Professional Applications III (2)	Staff
Fundamentals, rules, strategy, concepts and methods of teaching golf, badminton, swimming and tennis. Prerequisite: Intermediate skill levels determined by assessment program.	
P.Ed. 2563 Individual Sports I (1)	Holden, Persinger
Swimming, tennis, golf, etc. Designed to improve individual skill and knowledge. Prerequisite: P.Ed. 1419 or ability to swim four different strokes each with a minimum distance of 25 yds.	

P.Ed. 2568 Gymnastics I (1) Ridinger
Gymnastic activities such as heavy apparatus, stunts, tumbling, and floor exercise. Designed to improve the student's skills and knowledge in beginning movements.

P.Ed. 2577 Team Sports I (1) Scuderi
Hockey, soccer and basketball, skills and knowledge.

P.Ed. 3524 Care and Prevention of Athletic Injuries (2) Staff
The most recent information on the prevention and treatment of athletic injuries. Orientation to equipment, procedures and care and management of a training room. One lecture and one laboratory per week.
Prerequisite: Bio. 2402 and permission of instructor.

P.Ed. 3538 Health and Physical Education in the Elementary School (3) Staff
The principles, philosophy, objectives and specifics of practice in health and physical education for effective work with school children. Units of work on the various levels planned, yearly programs developed and activities applicable to all levels taught and analyzed.

P.Ed. 3540 Scientific Principles of Coaching (2) Andzel
A study of the factors that make for successful motor performance and the ability to recognize the elements of a skillful performance in various movement patterns. Gravity, force, balance, power, etc., and their implications in motor skills.

P.Ed. 3541 Coaching Women's Sports I (2) Venezia
Exploring training methods, skill development and team discipline necessary for cohesive competitive play. Selection of teams, practice sessions, scheduling, equipment and facilities, game management and health of players. Field hockey, soccer, speedball and basketball.

P.Ed. 3542 Coaching Women's Sports II (2) Thigpen
Same content as P.Ed. 3541 applied to volleyball, softball and la crosse.

P.Ed. 3543 Curriculum I (4) Schmidt, Smith
Curriculum development in physical education for K through 12. Methods and materials for team sports, individual sports, aquatics, dance and individualized activities in all phases of the program. Integration of physical education with other facets of the school program. Evaluation techniques in physical education. Taught by a team of specialists in physical education and related areas.
Prerequisite: Soc. 1000.

P.Ed. 3544 Curriculum II (5) Scuderi, Smith
A continuation of P.Ed. 3543, which is a prerequisite.

P.Ed. 3564 Individual Sports II (1) Stulb
A continuation of P.Ed. 2563.

P.Ed. 3569 Gymnastics II (1) Ridinger
Gymnastic activities such as heavy apparatus, free standing gymnastics with and without hand apparatus, stunts, tumbling, and floor exercise. Designed to improve the student's skills and knowledge in the more advanced movements.
Prerequisite: P.Ed. 2568.

P.Ed. 3577 Kinesiology (3) Errington
A study of the human body and its application to physical education. The function of the human skeleton, joints, ligaments and muscles. Two lectures and one laboratory.
Prerequisite: Bio. 2402 or permission of curriculum chairman.

P.Ed. 3578 Physiology of Exercise II (3) Andzel
The structure and function of skeletal muscles, energy sources, and oxygen requirements for muscular activity. Two lectures and one laboratory per week.
Prerequisite: Bio. 2402 or permission of curriculum chairman.

P.Ed. 3579 Team Sports II (1) Staff
A continuation of P.Ed. 2577, which is a prerequisite, including basketball, volleyball and softball.

P.Ed. 4500 Student Teaching (8) Staff
Experience in full time teaching in a public school under the guidance and direction of a cooperating teacher and a college supervisor.

P.Ed. 4510 The Meaning of Human Movement (3) Schmidt
The nature and forms of individual and collective movement. The interrelationships of concerned with movement behavior, both as individuals and as human beings responsible for modifying the behavior of others.

P.Ed. 4551 Adaptive Physical Education (2) Staff
Introduction to the nature of the most common handicapping conditions most likely to occur in the school system. Organization, administration and teaching of adaptive programs.

P.Ed. 4554 Organization, Administration and Supervision of Health and Physical Education (3) Staff
Facilities, equipment and personnel involved in programs in physical education and health education. Types of organization and problems in administration and supervision.
Prerequisites: H.Ed. 3233 and P.Ed. 3544.

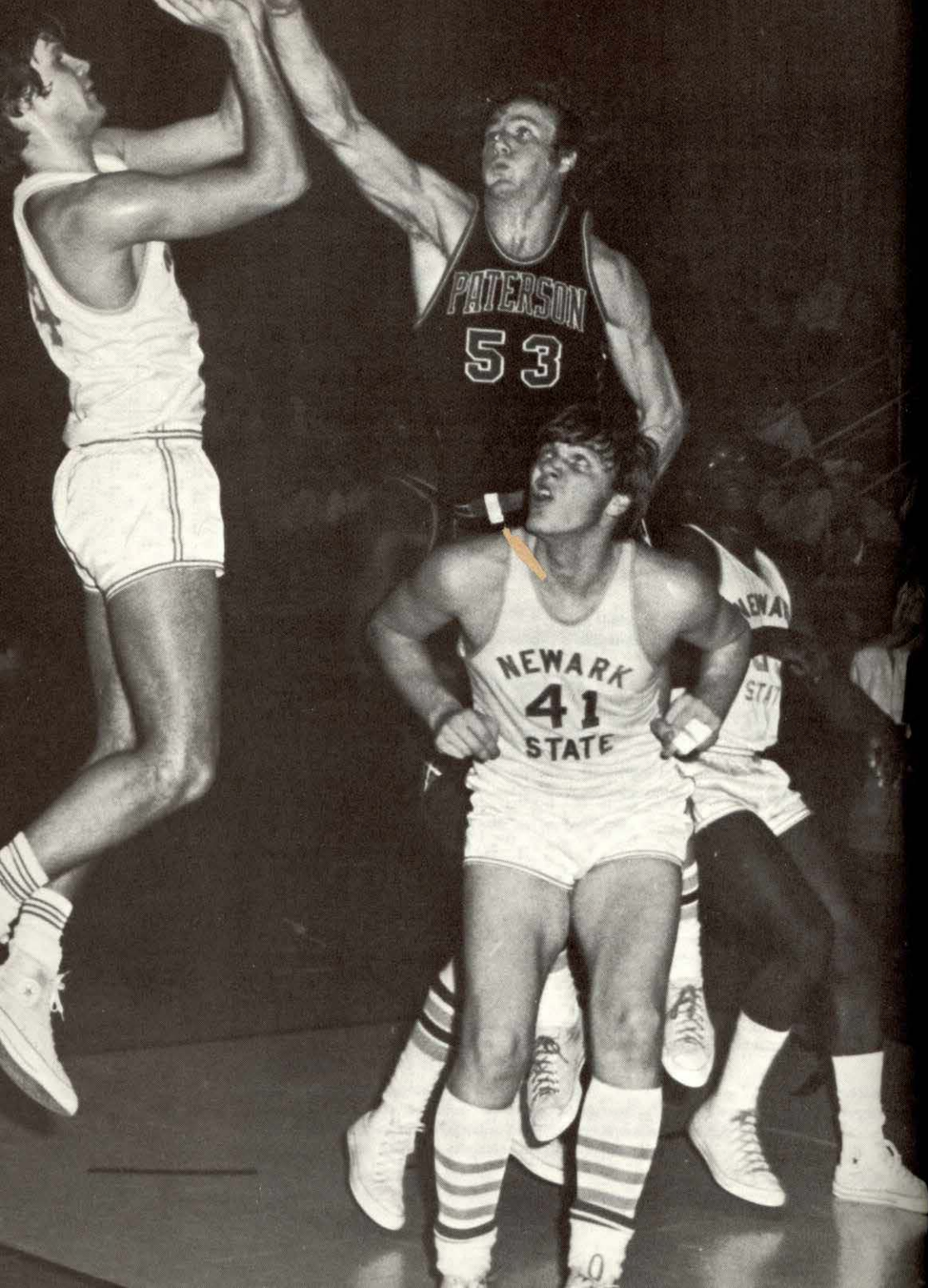
P.Ed. 4555 Evaluation in Physical Education (2) Errington, Karbe
Use of tests and measurements in physical education; evaluation of objectives, programs and student achievement through standardized and original measurement techniques.

P.Ed. 4565 Officiating Women's Sports I (2) Scuderi, Venezia
A study of rules, techniques and procedures for officiating. Emphasis on hockey, basketball and soccer. Students required to take at least one of the national rating examinations.

P.Ed. 4566 Officiating Women's Sports II (2) Scuderi, Venezia
Same requirement as P.Ed. 4565. Emphasis on volleyball, softball and swimming.

P.Ed. 4568 Team Sports III (1) Venezia
A continuation of P.Ed. 3579 including lacrosse, speedball and volleyball strategy.

P.Ed. 4591 Organization and Administration of Intramural Sports (2) Andzel
History, present status, objective of intramural movement; organization and affiliation with other departments; units of competition from elementary to college level; program of activities; group, team, and individual schedule making and scoring plans; rules, regulations, awards; special administrative problems.



Elective

P.Ed. 2622 Red Cross Water Safety Instructor (2) Holden, Karbe
 Designed for improved proficiency in all aquatic skills and expertise in teaching all Red Cross swimming and water safety skills. Continuous positive attitude toward water safety must be demonstrated. Successful completion recognized by Red Cross certification. Equipment: snorkel, masks and finds.
 Prerequisite: Red Cross Sr. Life Saving certificate acquired or renewed within the last three years.

P.Ed. 3621 Play and Rhythm Activities in Early Childhood Education (2) Resnick
 Creative and dramatic activity as it relates to play and rhythmic responses of young children; covers progressions to and presentation of games of low organization and rhythmic activities for the kindergarten and primary teacher with stress on kinds of movement desirable for each group.

P.Ed. 4625 Modern Dance (1) Schwartz
 Skills in modern dance and techniques of the various contemporary modern dancers.

P.Ed. 4626 Folk Dance for Children (1) Schmidt
 Designed to build an extensive repertoire of children's folk dances for teachers, recreational leaders and camp counselors. Techniques of analyzing, teaching and leading folk dancing for children from five thru fourteen years of age.

P.Ed. 4627 Dance Composition (2) Schwartz
 The elements of dance, various types of accompaniment and staging and the relationship of these to dance composition.
 Prerequisite: P.Ed. 4625 or permission of the instructor.

P.Ed. 4628 American Folk Dancing (1) Schmidt
 Designed to improve skills and to provide the fundamentals of teaching, leading and calling folk dances. Co-educational.

P.Ed. 4681 Independent Study in Physical Education (3) Schmidt
 The student selects an area of study in health and physical education under the guidance of faculty. The students and an assigned faculty member meet at regular intervals concerning the study. A minimum of 75 hours of research required.

Outdoor Education

P.Ed. 2800 Camping (3) Holden
 Campcrafts, camp counseling, primitive camping, camp programs and activities. Sessions in actual camping situation required with laboratory fee charged. Satisfactory completion of course meets requirements of N.J.A.C.A. and A.C.A. campcraft certification.

P.Ed. 3800 Environmental Recognizance (3) Cummings
 Designed to provide awareness of environmental and ecological problems, patterns and relationships. Interdisciplinary strategies of moving from concept to practice affecting urban regions. Explorations of various lengths in the fields and community. A resident field expedition and outdoor laboratory experiences required.

Recreation

P.Ed. 2901 Foundations of American Recreation (3) Cummings
 Philosophy, knowledge, skills and appreciation which are basic requisites for leadership in the out-of-doors. School administered programs of national interest. Includes at least one weekend in actual camp situation. Laboratory fee charged for food and lodging.

P.Ed. 4900 (4993) Recreation Leadership (3) Cummings
 Organization and administration of recreation programs for playground, camp, and recreation centers, with emphasis on the role of the recreation leader.



Faculty: Battista, Buchanan, Didsbury, Fridlington, Furer, Goldberg, Higgins, Leonard, Letterese, Lewis, Luscombe, Lutz, Mayer, Raichle, Rice (Chairman), Siegel, Spaulding, S. Strauss, Tyson, L. H. Zimmer

Major in History

	semester hours
GENERAL EDUCATION REQUIREMENTS (see page 27)	
MAJOR REQUIREMENTS	30
Required Courses	12
Hist. 2303-2304 United States History	6
European history (3000-4000 Level)	6
Major Electives selected from upper division (3000 and 4000 level) courses with departmental advisement.	18
ELECTIVES (see page 28)	124

Collateral Program in Secondary Education Students who wish certification to teach must complete the Collateral Program in Secondary Education and must also elect appropriate courses in several social sciences with departmental advisement.

Introductory

Hist. 1030 History of Western Civilization I (3) Staff

A survey of the historical development of modern civilization from early times. Special attention given to cultural diffusion and integration, to institutions and ideas.

Hist. 1040 History of Western Civilization II (3) Staff

A continuation of Hist. 1030.

Hist. 1050 Origins of Political and Social Values: The Judeo-Christian-Classical Fusion (3) Goldberg, Letterese, Lewis

A study of the development in ancient times of the great ethical and political traditions of the Jews, Greeks and Romans. The role of Christianity in assimilating these values and transmitting them to later ages.

Hist. 1051 The Processes of Civilization: Cultural Borrowings and the Emergence of Western Man (3) Lewis, Spaulding

The significance of the interaction of Byzantine, Islamic and Western European cultures in the emergence of Western man.

Hist. 1052 The Grand Design of the Modern State: The Formation of the European Community (3) Higgins, Zimmer

A survey of the development of the individual European governments from feudal monarchies. Their attempts to transcend nationalism by inter-state cooperation, 400-1453.

Hist. 1053 Capitalism, Technics and Culture: European Reconnaissance and Expansion (3) Higgins, Lutz, Strauss

Survey of the developments in European history which led to European expansion into Asia, Africa and the Americas. Assessment of the character of European dominance of these areas and the disengagement from European dominance.

Hist. 1060 From Scientific Revolution to Democratic Revolutions Siegel, Strauss

The Intellectual Revolution of the 17th and 18th centuries with special emphasis on the resultant revolutionary upheavals from England to Russia.

Hist. 1061 Freedom and Organization: Nationalism, Imperialism and Industrialism (3) Goldberg, Lutz, Zimmer

The events of the century and a half since the end of the Napoleonic Wars which illuminate the problems of Western man. The contemporary search for balance between individual freedom and submission to authority is the lens through which the course is focused.

Hist. 1062 From Western Civilization to World Civilization: Crises of the Contemporary World (3) Letterese, Siegel

A survey of world civilization in contemporary times, showing how Western civilization has spread throughout the world, and has been altered and, in part, rejected in the process.

Ancient

Hist. 3110 Greek Civilization (3)

Lewis

A survey of Hellenic history and culture from prehistoric origins to the creation of the Graeco-oriental or "Hellenistic" civilization. The political experience of the Greeks and of their intellectual and artistic contribution to Western civilization. The formation of the Polis, Greek imperialism, the heroic and tragic world-view and the development of philosophic method.

Prerequisite: Six hours of history.

Hist. 3120 Roman Civilization (3)

Lewis

Rome's growth and decline from Etruscan times to the barbarian invasions. Rome's success in creating a governmental unity throughout the Mediterranean world. The internal consequences of the acquisition of empire.

Prerequisite: Six hours of history.

Hist. 3121 The Ancient City (3)

Lewis

Urbanization from the beginning of history to the fall of the Roman Empire. Study of the problems faced by early city dwellers as related to the modern urban situation.

Prerequisite: Six hours of history.

Hist. 4120 Archaeology (3)

Lewis

An introduction to the methods of archaeology, and a survey of recent archaeological excavation. Emphasis will be on classical archaeology but study of other cultures will be included.

Prerequisite: Six hours of history.

European

Hist. 3231 Medieval Europe: History and Civilization I (3)

Zimmer

Europe from the Barbarian invasions to the renaissance of the 12th century. A survey of the history, institutions and culture of the middle centuries of Western Civilization.

Prerequisite: Six hours of history.

Hist. 3232 Medieval Europe: History and Civilization II (3)

Zimmer

A continuation of Hist. 3231 which is not prerequisite. The height of the Middle Ages; the decline and end of medieval civilization.

Prerequisite: Six hours of history.

Hist. 3235 Europe in the 17th Century (3)

Higgins

An analysis of the political, economic, military, and intellectual trends in Europe from the end of the Reformation period to the end of the reign of Louis XV. Special emphasis on developments in science and philosophy and in political and social thought.

Prerequisite: Six hours of history.

Hist. 3236 Europe in the 18th Century (3)

Zimmer

An analysis of the intellectual, political, economic, and social developments in 18th century Europe before the French Revolution. Special attention given to the concept of the Enlightenment.

Prerequisite: Six hours of history.

Hist. 3237 The Emergence of Modern England: 1689-1815 (3)

Strauss

England's progress during the 17th and 18th Centuries toward big power status. Cultural, political and social developments discussed with emphasis on England's emergence as a modern industrial power. Literary as well as historical sources will be used.

Prerequisite: Six hours of history.

Hist. 3238 The Age of Reform: England Since 1815 (3)

Strauss

Describes the political and social reform movements in England: the emergence of liberalism and the fight for an extended suffrage; the conflicts between laissez-faire and state intervention; isolationism and interventionism. Literary as well as as historical sources will be used.

Prerequisite: Six hours of history.

Hist. 3239 France and the Revolutionary Tradition Since Napoleon (3)

Siegel

History of modern France, highlighting the impact of modern ideologies of social change and revolution upon French politics and culture since 1815. Emphasis placed on the uniquely French responses to the great social transformations which have fashioned contemporary world society.

Prerequisite: Six hours of history.

Hist. 3240 Renaissance and Reformation (3)

Zimmer

An analysis of the development of the Renaissance and Reformation in their relation to the formulation of a base for the building of contemporary secular society.

Prerequisite: Six hours of history.

Hist. 3252 European Intellectual History in the 19th and 20th Centuries (3)

Lutz

An examination of the main currents of European thought in the 19th and 20th centuries. Emphasis on source readings and discussion in philosophy, literature, science, political, literary and artistic theory. Some attempt is made to estimate the degree of penetration into the masses of the theories of the intellectuals.

Prerequisite: Six hours of history.

Hist. 4220 The Revolutionary Era, 1789-1870 (3)

Higgins

A detailed examination of the French Revolution of 1789 is followed by a study of its legacy. The role of nationalism, the development of socialism in 19th century Europe, the unification of Italy and Germany and the emergence of *real politik*.

Prerequisite: Six hours of history.

Hist. 4233 Tsarist Russia: From the Moscovite Period to the Great Emancipation (3)

Siegel

Imperial Russia under the Rurik and Romanov Tsars studied as an important aspect of the growth of European Absolutism and the social system of the Old Regime. The unique problems of the Moscovite state traced to the eve of the Russian Revolutionary Movement. Culture, personalities and institutions critically evaluated by readings in the classic and contemporary literature.

Prerequisite: Six hours of history.

Hist. 4234 Revolutionary and Soviet Russia (3)

Siegel

Modernization and revolution in modern Russia from the first liberal reforms of Alexander II to the contemporary developments in the U.S.S.R. Russia's participation in the critical moments of the last century; the industrial revolutions, world wars, and the continuing ideological struggle between varying forms of liberalism and communism. The problems of continuity and change in modern Russia since 1917 highlighted by readings and discussions.

Prerequisite: Six hours of history.

Hist. 4237 Europe Since 1870 (3)

Letterese

Changes in European societies since the unification of Italy and Germany, with particular attention to nationalism and imperialism, democracy and dictatorship. Post-war trends toward European integration assessed in terms of Europe's position in the late 20th century world.

Prerequisite: Six hours of history.

Hist. 4238 History of Germany, 1805 to Present (3)

Goldberg

The emergence of modern Germany with emphasis on political unification, economic growth, militarism, nationalism, the World Wars and their aftermath.

Prerequisites: Six hours of history.



Hist. 4239 The Hapsburg Empire and the Nationality Problem, 1804-1918 (3) Lutz
A study of the Hapsburg Empire from its formal establishment in 1804 to its dissolution in 1918; economic, social, and political developments related to the problems of nationality and the multi-national state; interplay between Hapsburg policies and the ambitions of Central Europe's Germans, Hungarians, Czechs, Serbs, etc., which weakened the Empire, led it into World War I, and contributed to its disintegration along national lines.

Prerequisite: Six hours of history.

American

Hist. 2303 United States History to 1877 (3) Staff
A comprehensive study of the American people, including the colonial period, the struggle for independence and the national period through Reconstruction.

Hist. 2304 United States History — 1877 to Present (3) Staff
A study of the development of American industrialism, westward expansion, the reform impulse and foreign affairs to the present day.

Hist. 3305 The History of the Black American (3) Rice, Tyson
The role of blacks in the United States from the colonial period to the present, stressing African roots, slavery, Reconstruction, the era of Jim Crow, the origins and impact of the mid-twentieth century Black Revolution. Emphasis placed on the particular contributions of blacks to the development of the nation.

Prerequisite: Six hours of history.

Hist. 3324 The American West (3) Fridlington
The history of the advancing frontier in the United States from colonial times through the nineteenth century with an analysis of its effect upon the institutional and intellectual development of the American people. Special emphasis given to the historiography of American frontier history.

Prerequisite: Six hours of history.

Hist. 3330 The Labor Movement in America: 1864 to Present Battista
Analysis of the reaction of the American working class to the rise of the industrial state. Examination of the trade union movement and the millenarian movements.

Prerequisite: Six hours of history.

Hist. 3340 20th Century America (3) Battista
An examination of the major economic, social, political and diplomatic trends in the twentieth century, with emphasis on the quest for social justice at home and abroad.

Prerequisite: Six hours in history.

Hist. 4319 The British Colonies and the American Revolution (3) Luscombe
An examination of the basis of American society covering the colonial period of American history and the American Revolution. Social, economic and political origins and events treated in relation to modern American practices and institutions.

Prerequisite: Six hours of history.

Hist. 4321 American Liberty and Law (3) Raichle
After a brief introduction to the Supreme Court and Constitution, a detailed analysis of the growth and development of the Bill of Rights. In effect, the course attempts to probe how free speech is; what religious liberty means; what the right of privacy is; and what rights the accused person has.

Prerequisite: Hist. 2303-2304.

Hist. 4323 Religion in America: An Historical Approach (3) Luscombe
Surveys, objectively and within the discipline of history, religious developments in American history from the background of settlement to current religious trends. Examines the interaction of secular and religious aspects of our culture. Goal: knowledge and understanding of the basic beliefs and practices of Roman Catholicism, Judaism, and the major religious denominations of Protestantism; an appreciation of the contribution of each to American civilization. Special attention given to possible religious significance in current movements among the youth.

Prerequisite: Six hours of history.

Hist. 4327 Growth of American Thought (3) Raichle
A survey of American hopes, aspirations and sense of purpose from Emerson and Thoreau to the present. Through critics and champions of democratic faith an attempt is made to outline a pattern of American thought.

Prerequisite: Hist. 2303-2304 or equivalent.

Hist. 4328 Dissent, Crisis and Consensus in American History (3) Luscombe
An effort is quantitative and impressionist history focusing on those incidents when dissent flared into violence. An attempt made to find recurring themes, make comparisons, collect and classify data, and draw conclusions.

Prerequisite: Six hours of history.

Hist. 4361 The American City (3) Furer
The growth of urban America, beginning with the colonial seaports through the twentieth century, including the spread of industrialization, transportation and communication. The impact of the city on American culture. Present day problems — race relations, the population explosion, the rise of suburbia, and the development of megalopolis.

Prerequisite: Six hours of history.

Hist. 4365 American Foreign Affairs I: 1175-1899 (3) Mayer
A basic survey of American diplomatic history to 1899 dealing with the formation and implementation of American foreign policy with a view to its effect on the world situation and domestic developments.

Prerequisite: Hist. 2303-2304.

Hist. 4366 American Foreign Affairs II: 1899 to Present (3) Mayer
The emergence of the United States as a world power examined with particular attention to imperialism, World Wars I and II, and the cold war.

Prerequisite: Hist. 2303-2304.

Hist. 4367 The History of American Immigration (3) Furer
The society of the United States as a mosaic made up of various immigrant groups. Each successive wave of newcomers treated separately: their origins and character; their settlement and reception in the United States; their reaction to the new world; their impact on their adopted country; the effect of the exodus on their homelands; and United States immigration policies.

Prerequisite: Six hours of history.

Hist. 4370 Canadian History: 1534 to Present Higgins
Events and institutional developments involved in the emergence of the Dominion of Canada as a contributor to both American history and world history.

Prerequisites: Hist. 2303-2304.

Hist. 4381 History of Latin America to 1825 (3) Buchanan, Socarras
An historical survey of the peoples and cultures of Latin America from the pre-Columbian periods to the wars of independence.

Prerequisite: Six hours of history.

Hist. 4382 History of Latin America: 1825 to Present (3) Buchanan, Socarras
An historical survey of the peoples and cultures of Latin America beginning with the wars of independence and concluding with the role of Latin America in the present day.

Prerequisite: Six hours in history.

Hist. 4383 History of the Caribbean World (3)

Buchanan

The evolution of the modern Caribbean World from pre-Columbian times to the present, with an emphasis upon the major social, cultural, economic and political threads of development.

Prerequisite: Six hours of history.

Asian**Hist. 2471 History of Far Eastern Civilization I: From Early Times to the 19th Century (3)**

Didsbury, Leonard

Designed to give the student an intelligent understanding and appreciation of the great cultural traditions of the Far Eastern World. Surveys the culture and civilizations of China, Japan, and Korea from early times to the 19th Century, with significant source materials in suitable English translations.

Hist. 2472 History of Far Eastern Civilization II: The 19th and 20th Centuries (3)

Didsbury, Leonard

An examination of the impact of the Western world on the traditional cultures of China, Japan and Korea; their different reactions to the Western challenge; the causes of tension and conflict. Continuous use of significant Far Eastern source materials in suitable English translations.

Hist. 3400 Diplomatic History of the Far East in the 19th and 20th Centuries (3)

Leonard

A survey of the diplomatic relations and power politics of the Western Powers in the Far East; the rise of the Japanese Empire as a world power, and its repercussions on China in particular.

Prerequisite: Six hours of history.

Hist. 3410 China in the 20th Century (3)

Leonard

A study of Nationalist and Communist China with special emphasis upon the rise of nationalism and the problems of industrialization.

Prerequisite: Six hours of history.

African**Hist. 2500 Survey of African Prehistory and History (3)**

Spaulding

A survey of Africa's prehistory and history from earliest times to the twentieth century in the light of archaeological and anthropological findings as well as written documents. Attention focused on the development of African contacts with Asia, Europe, and the Americas, and on Africa's internal history.

Hist. 2510 Political History of Africa in the 20th Century (3)

Spaulding

A study of the development of African nationalism in the 20th century, and its emergence from European colonial domination.

Middle Eastern**Hist. 3600 Historical Survey of Islamic Civilization in the Near East (3)**

Spaulding

From the emergence of Islam until the dissolution of the Caliphate in the 20th Century.

Prerequisite: Six hours of history.

Hist. 3610 The Ottoman Empire (3)

Spaulding

A study of the rise and decline of Ottoman power, from vibrant conqueror to "the sick man of Europe".

Prerequisite: Six hours of history.

Comparative**Hist. 3851 Alienated Youth, Past and Present (3)**

Lutz

An historical approach to the youth movements of alienation, from the Goliards of the 11th and 12th centuries to the New Left of the Twentieth Century.

Prerequisite: Six hours of history.

Hist. 3860 Jewish History (3)

Zimmer

Beginning with the period of the Patriarchs, an overall picture of the most important eras in the history of the Jewish people.

Prerequisite: Six hours of history.

Hist. 3870 Dreams and Nightmares: Utopias and History (3)

Didsbury

A study of various conceptions of ideal and sinister societies—utopias and dystopias—from Plato to Huxley. The economic foundation and structure of the retrospective conceptions; the emergence of a negativist utopian tradition in post-industrial civilization.

Prerequisite: Six hours of history.

Hist. 4870 Planning for Tomorrow Today: Alternative Futures (3)

Didsbury

Introduction to a number of the more significant current "alternative futures" studies produced by scientific and academic research groups around the world. In addition to this examination of key futurist research, the methods employed by futurists to arrive at their forecasts are studied.

Prerequisite: Six hours of history.

Hist. 4881 Philosophy, Science and Civilization I: Foundations of Traditional Civilizations (3)

Didsbury

A comparative study of the religious, philosophical and scientific foundations of a select number of civilizations, including the Graeco-Roman, Islamic, Chinese, Hindu and Christian, presented in their appropriate historical contexts.

Prerequisite: Six hours of history.

Hist. 4882 Philosophy, Science and Civilization II: The Modern Scientific and Technological Impact on Culture (3)

Didsbury

A comparative study of the impact of modern science and technology upon Western Christian, Far Eastern, Islamic and Hindu Civilizations, showing their uniform, varied and unsettling effects upon traditional cultural patterns and ideals.

Prerequisite: Six hours of history.

Hist. 4840 Women in History

Leonard, Lewis, Strauss

The role of women in different cultures throughout the ages. The lives of outstanding women and movements seeking "liberation" of women.

Prerequisite: Six hours in history.

Seminars and Independent Study

Hist. 4990 Senior Seminar in History (3)

Staff

Open only to senior history majors. Geared to the highest competency. Staffed by department members who will give insights into the problems of historical methodology and research.

Prerequisite: Twelve hours of history.

Hist. 4991 Seminar on the City (6)

Furer

Provides direct participation in the urban process through supervised placement two full days per week in a public or private agency in a city during one semester of the junior or senior year. Seminar held each week to discuss the field experience and general urban problems. Internship planned individually to fit student's program.

Prerequisite: Fifteen semester hours of the Collateral Program in Urban Studies.

Hist. 4995 Independent Study in History (3)

Staff

Opportunity for history majors to develop independent research projects in particular fields under the guidance of members of the department. Meeting hours arranged by student and advisor and consist of at least thirty fifty-minute periods. The student is responsible for the plan of work, its development, and a final presentation in conformity with standards set by the advisor.

Prerequisite: Six hours of history.

Faculty: Angebrandt, Bernagozzi, Christoffel, Clinton, Cokewood, Jahn, McLennand, Peterson, Sladicka, Jr., Snyder (Chairman), Thatcher, Van Nest, Vos

Major in Industrial Education

In the preparation of industrial arts teachers for grades K-12 emphasis is placed on an understanding of our complex technical society and the problems growing out of such complexity as well as the teaching of manipulative skills. It is recognized that the graduate must be an educator first and an industrial arts teacher second. Students who complete this program will be eligible for a New Jersey certificate to teach industrial arts in grades K-12.

	semester hours
GENERAL EDUCATION REQUIREMENTS (see page 27)	36
Required Cognate Courses	6
Eng. 1900 Speech	3
Psy. 1000 General Psychology	3
ADDITIONAL COGNATE COURSES	9
<i>selected from Clusters I, II and/or III in General Education Requirements</i>	
MAJOR DEPARTMENT REQUIREMENTS	68
Common Foundation Courses to be taken by all students in the major:	14
I.S. 1101 Introduction to Industrial Studies	2
I.S. 1200 Elements of Drafting	2
I.S. 1300 Elements of Woodworking	2
I.S. 1400 Elements of Metalworking	2
I.S. 1500 Elements of Electronics	2
I.S. 1600 Elements of Graphics	2
I.S. 1700 Elements of Power	2



Programs for Major Interest Areas

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After completing the common foundation courses in the major, a student has the opportunity to select a major interest area. A student must take all the courses listed under the interest area.

DRAFTING AND DESIGN

I.S. 2201 Technical Drafting	3
I.S. 2202 Machine Drafting and Design	3
I.S. 3200 Design Fundamentals	3
I.S. 3205 Light Building Design	3
I.S. 3204 Architectural Drafting	3
I.S. 4206 Technical Illustration	3
I.S. 4210 Design Application	3

Electives chosen with approval of interest area advisor from I.S. courses

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WOODS

I.S. 2500 General Electricity-Electronics	3
I.S. 3204 Architectural Drafting	3
I.S. 2301 Machine Woodworking	3
I.S. 2302 Furniture Design and Construction	3
I.S. 3200 Design Fundamentals	3
I.S. 3303 Carpentry and Building Construction	3
I.S. 4304 Contemporary Trends in Woodworking	3
I.S. 4305 Cabinetmaking	3
I.S. Electives	9

METALS

I.S. 2202 Machine Drafting and Design	3
I.S. 2301 Machine Woodworking	3
I.S. 2401 Welding Technology	3
I.S. 2402 Metal Fabrication	3
I.S. 2500 General Electricity-Electronics	3
I.S. 3200 Design Fundamentals	3
I.S. 3403 Forge and Foundry Practice	3
I.S. 3404 Machine Metals	3
I.S. 4405 Products Manufacturing	3
I.S. 4406 Metallurgy	3
I.S. Electives	3

ELECTRONICS

I.S. 3203 Electronic Drafting	3
I.S. 2501 Circuit Analysis I	4
I.S. 2502 Circuit Analysis II	4
I.S. 3503 Electronic Tubes and Semiconductors	4
I.S. 3504 Circuit Systems I	3
I.S. 4505 Circuit Systems II	3
I.S. 4506 Fabrication and Development of Electronic Devices	3
I.S. 2602 Screen Process Reproduction	3
Supplemental mathematics and/or supplemental physics and/or major option with departmental advisement	6

GRAPHICS

I.S. 2500 General Electricity-Electronics	3
I.S. 2601 Advanced Letterpress Reproduction	3
I.S. 2602 Screen Process Reproduction	3
I.S. 3603 Black and White Photographic Reproduction	3
I.S. 3604-3605 Color Photographic Reproduction I and II	6
I.S. 4606-4607 Lithographic Reproduction I and II	6
I.S. 4608-4609 Color Separation	6
I.S. Electives	3

COMPREHENSIVE

I.S. 3200 Design Fundamentals	3
I.S. 3471 Metalsmithing I	3
I.S. 3803 Plastics	3
I.S. 3804 Crafts	3
I.S. 4106 Construction and Use of Audio-Visual Media	3
Phil. 2240 Aesthetics	3
<i>Specialization Electives for Comprehensive Programs select 15 hours:</i>	
I.S. 2201 Technical Drafting	3
I.S. 2501 Circuit Analysis I	4
I.S. 2301 Machine Woodworking	3
I.S. 2602 Screen Process Reproduction	3
I.S. 3404 Machine Metals	3
I.S. 4472 Metalsmithing II	3
I.S. 4210 Design Application	3
I.S. 4981-4982 Independent Study I and II	3-6

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Professional Education

I.S. 4102 Principles and Techniques of Teaching Industrial Arts Education	2
I.S. 4103 Principles, Methods, Curriculum in Industrial Arts Education	2
I.S. 4104 Principles and Techniques of Education	3
Ed. Psy. 3801 Educational Psychology	3
One course in foundations: E.P.S. 4010-4070	3
I.S. 4110 Student Teaching	8

ELECTIVES (see page 28)

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Major in Industrial Technology

Industrial technology is a baccalaureate degree program designed to prepare individuals for technical managerial, production supervisory and related types of professional leadership positions. The curriculum, even though built on technical education, has a balanced program of studies drawn from a variety of disciplines relating to industry. Included are a sound knowledge and understanding of materials and manufacturing processes, principles of distribution, and concepts of industrial management and human relations; experiences in communication skills, humanities and social sciences; and a proficiency level in the physical sciences, mathematics, design and technical skills to permit the graduate to capably cope with typical technical managerial and production problems.

	semester hours
GENERAL EDUCATION REQUIREMENTS (see page 27)	36
Required Cognate Courses	16
<i>Within the Sciences and Mathematics Cluster:</i>	
Math. 1052 College Algebra and Trigonometry	3
Phys. 2091 General Physics I	4
<i>Within the Social and Behavioral Sciences and History Cluster:</i>	
Econ. 1020-1021 Principles of Economics I and II	6
Psy. 1000 General Psychology	3
ADDITIONAL COGNATE COURSES	13
Econ. 2800 Labor Economics	3
Math. 1053 Analytic Geometry	3
Math. 1931 Computer Arithmetic Algorithms	3
Phys. 2092 General Physics II	4
MAJOR REQUIREMENTS	64
Required Courses	14
I.S. 1101 Introduction to Industrial Studies	2
I.S. 2201 Technical Drafting	3
I.S. 2900 Preparation of Technical Documents	3
I.S. 3900 Industrial Statistics and Quality Control	3
Math. 2411 Calculus I	3

Area Specialization *choice of one area*

DESIGN TECHNOLOGY	3
I.S. 3200 Design Fundamentals	3
I.S. 4210 Design Application	3
I.S. 4206 Technical Illustration	3
I.S. 4405 Products Manufacturing	3
I.S. 4981 Independent Study	3
ELECTRONIC TECHNOLOGY	4
I.S. 2501 Circuit Analysis I	4
I.S. 2502 Circuit Analysis II	4
I.S. 3503 Electron Tubes and Semiconductors	4
I.S. 3504 Circuit-Systems I	3
GRAPHIC ARTS TECHNOLOGY	3
I.S. 2601 Advanced Letterpress Reproduction	3
I.S. 2602 Screen Process Reproduction	3
I.S. 3603 Black and White Photographic Reproduction	3
I.S. 4606 Lithographic Reproduction I	3
I.S. 4607 Lithographic Reproduction II	3
MANUFACTURING TECHNOLOGY	3
I.S. 2202 Machine Drafting and Design	3
I.S. 2401 Welding Technology	3
I.S. 3403 Forge and Foundry Practice	3
I.S. 3404 Machine Metals	3
I.S. 4406 Metallurgy	3
Major Electives <i>consult with Industrial-Academic Advisement Team.</i>	35
ELECTIVES (see page 28)	11

Major in Industrial Technology Mechanical Contracting Technology Option

This consortium program conducted by Newark State College and Newark College of Engineering prepares the student for a career as a manager in a mechanical contracting firm operating in the construction industry. The role of mechanical contracting in construction is the installation of heating, air conditioning, ventilating, plumbing and piping systems in large buildings and plants. In heating and air conditioning, for example, the technologist applies his knowledge of physics, mathematics and other sciences to the solution of problems encountered in the purchasing and installation of today's highly complex interior climate control systems.

	semester hours
GENERAL EDUCATION REQUIREMENTS	36
<i>Same as page 134</i>	
ADDITIONAL COGNATE COURSES	13
<i>Same as page 134</i>	
MAJOR DEPARTMENT REQUIREMENTS	48
Required Courses	
I.S. 1101 Introduction to Industrial Studies	11
I.S. 3200 Design Fundamentals	2
I.S. 2100 Preparation of Technical Documents	3
I.S. 4910 Industrial Law	3
Area Specialization	37
MECHANICAL CONTRACTING TECHNOLOGY	
Mgt. Sci. 2120 Business Statistics	3
Mgt. Sci. 2100 Marketing	3
Mgt. Sci. 2110 Principles of Accounting I	3
*X.C. 303 Construction Blueprint Reading	2
*X.C. 304 Quantity Survey & Estimates	2
*X.C. 153 Estimating & Contracts	2
*X.C. 574 Construction Supervision	2
*X.C. 421 Business Law & Building Codes	2
*X.C. 205 Heating and Air Conditioning	4
*X.C. 204 Refrigeration	4
*X.C. 351 Heating Design	2
*X.C. 352 Air Conditioning Design	2
*X.C. 395 Heating Vent. and Air. Cond. Equipment	2
*X.C. 542 Building Equipment I	2
*X.C. 643 Plumbing Design	2
ELECTIVES <i>Consult with Industrial-Academic Advisement Team</i>	27
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*Courses to be taken at Newark College of Engineering

Courses for Non-Departmental Majors

- I.S. 3080 Basic Industrial Arts (2)** Staff
Emphasis placed upon the creative use of materials and processes in designing and working in wood, metal, and other three-dimensional materials.
- I.S. 4001 Industrial Education in the Elementary School (3)** Staff
Designed to develop an understanding of the role of industrial arts in elementary education. Experience gained in using suitable tools and materials and in developing activities with emphasis on grades 4-G.
- I.S. 4002 Industrial Arts in Early Childhood Education (3)** Staff
Early childhood majors develop an understanding of the role of industrial arts in early childhood education. Experience gained in using suitable tools and materials and in developing activities for the nursery school, kindergarten and first three grades.
- I.S. 4020 General Mechanical Drawing (2)** Staff
Provides beginning experiences in various areas of mechanical drawing, including basic drawing techniques, geometrical constructions, pictorial drawings, graphs, and elementary architectural drawing.
- I.S. 4060 General Graphic Arts (2)** Staff
Providing experience in the various areas of the graphic arts, including a study of basic information concerning hand composition, press operation, and methods of duplicating.

Education

- I.S. 1101 Introduction to Industrial Studies (2)** Snyder
Analysis and discussion of the nature, content and implications of problems relating to further development of industrial education.
- I.S. 4102 Principles and Techniques of Teaching Industrial Arts Education (2)** Christoffel, Van Nest
Patterns of organization, class management, teaching methods and lesson planning are of primary concern. An opportunity to recognize and analyze the many problems of teaching industrial arts will be provided.
- I.S. 4103 Principles, Methods and Curriculum in Industrial Arts Education (2)** Christoffel, Van Nest
The study of accepted industrial arts curriculum and teaching practices used in the Public Schools of New Jersey.
- I.S. 4104 Principles and Techniques of Education (3)** Staff
This course introduces the student to curriculum patterns, planning techniques, methods of discussion, and to general principles of instruction required for teaching in either elementary or secondary schools.
- I.S. 4105 Elementary School Industrial Education (3)** Staff
Designed for industrial education majors to have opportunity to clarify the concept of industrial arts activity in the elementary school.
- I.S. 4106 Construction and Use of Audio-Visual Media (3)** Staff
Provides an awareness of the values of audio-visual materials and of the considerations involved in constructing such material. Emphasis is placed on the variety of material available for audio-visual purposes and of their application in instructional situations.
- I.S. 4110 Student Teaching (8)** Staff
Experience in full time teaching in a public school under the guidance and direction of a cooperating teacher and a college supervisor.

I.S. 4181 Independent Study in Industrial Education (3)

Staff

Industrial Education majors given opportunity to develop independent projects or research studies in their field. Each student expected to initiate an independent program of study under the close supervision of a faculty member. Student is responsible for the plan of work, its accomplishment and suitable presentation at completion of course. Hours to be arranged by student and instructor; study shall involve a minimum of 75 clock hours of classroom and/or laboratory work. Enrollment is by permission of advising faculty member.

I.S. 4182 Independent Study in Industrial Education II (3)

Staff

A continuation of I.S. 4181.

Drafting and Design**I.S. 1200 Elements of Drafting (2)**

Staff

Application of drafting room standards and experiences in the use of drafting instruments, lettering, pencil and ink line work, freehand sketching, and in the reproduction of drawings. Instruction includes geometric construction, orthographic projection, sections and conventions, working drawings, and graph and chart construction.

I.S. 2201 Technical Drafting (3)

Staff

Advanced laboratory units in dimensioning, hole and fastening device conventions, auxiliary views, pictorial representation, and material and finish specifications.

Prerequisite: I.S. 1200.

I.S. 2202 Machine Drafting and Design (3)

Staff

Advanced course with specific concern on shop processes, design and application of fasteners, cams, gears and common mechanisms. Emphasis placed on design problem involving elements of both empirical and scientific design.

Prerequisite: I.S. 1200.

I.S. 3200 Design Fundamentals (3)

Staff

An investigation of the basic aspects and the traditional concepts of design and of their implication to contemporary design.

Prerequisites: I.S. 1200, 1300, 1400, 1600.

I.S. 3203 Electronic Drafting (3)

Staff

Interpretation of industrial drafting practices as they apply to the electronics industry with emphasis on graphical methods, basic electronic principles and construction practices.

Prerequisite: I.S. 1200.

I.S. 3204 Architectural Drafting (3)

Staff

Exploration of the basic information concerning the commonly used materials of construction and the customary methods of combining them in the erection of buildings.

Prerequisite: I.S. 1200.

I.S. 4205 Light Building Design (3)

Staff

Comprehensive study of the planning and designing of residences and small, single-story, commercial buildings.

Prerequisite: I.S. 3204.

I.S. 4206 Technical Illustration (3)

Staff

Experience in area of pictorial reproduction known as technical illustration. Emphasis on the characteristics of parallel line and perspective drawings and on principles of light.

Prerequisite: I.S. 2201.

I.S. 4210 Design Application (3)

Staff

Application of basic design principles in the construction of a series of three-dimensional forms.

Prerequisite: I.S. 3200.

Woods**I.S. 1300 Elements of Woodworking (2)**

Peterson

Experience in hand joinery, wood finishing and basic machine operation. Instruction includes units on lumber selection and use, hardware selection, fastening devices and methods and essential care and maintenance of tools and machines.

I.S. 2301 Machine Woodworking (3)

Peterson

The development of skills, techniques and procedures in safely using and maintaining woodworking machines, both stationary and portable.

Prerequisite: I.S. 1300.

I.S. 2302 Furniture Design and Construction (3)

Peterson

Principles of furniture design; approved methods and procedures of upholstery with emphasis on upholstered leg and rail assemblies.

Prerequisite: I.S. 2301.

I.S. 3303 Carpentry and Building Construction (3)

Staff

Tools, materials and methods used in the construction of wood frame buildings to include framing, estimating and techniques employed in construction.

I.S. 4304 Contemporary Trends in Woodworking (3)

Staff

Exploration of latest materials and methods of fabrication with emphasis on research and experimentation. Self-direction on the part of students in selecting and solving problems is required.

Prerequisite: I.S. 2301.

I.S. 4305 Cabinetmaking (3)

Staff

Joinery, finishing and machine production techniques related to cabinet construction including drawers and guide systems, framed panel construction, doors and the application of plastic laminates.

Prerequisite: I.S. 2301.

Metals**I.S. 1400 Elements of Metalworking (2)**

Sladicka

Introductory units in the areas of foundry, sheet metal fabrication, machine operation, forging and heat treating with emphasis placed on project design, effective laboratory practice and craftsmanship.

I.S. 2401 Welding Technology (3)

Sladicka

Development of basic welding skills and safe and intelligent operation of welding equipment. Successful completion provides opportunity for teacher certificate in areas of oxyacetylene and electric arc welding.

I.S. 2402 Metal Fabrication (3)

Sladicka

Comprehensive understanding in the areas of sheet metal fabrication, ornamental metals, and art metal with emphasis placed on design, development of advanced skills, techniques, and procedures.

Prerequisite: I.S. 1400 and 2401.

I.S. 3402 Forge and Foundry Practice (3)

Staff

Experience in areas of forging and foundry practice including the study of industrial procedures and techniques.

Prerequisite: I.S. 2301 or permission of instructor.

I.S. 3404 Machine Metals (3)

Staff

A comprehensive study of machine shop operations and setups, including aspects of quality control and use of industrial measuring instruments.

Prerequisite: I.S. 1400.

I.S. 4405 Products Manufacturing (3) Staff
Simulation of industrial production, taught in conjunction with Machine Drafting and Design, with emphasis on the manufacture of a metals product.
Prerequisite: I.S. 3404.

I.S. 4406 Metallurgy (3) Staff
Understanding of the properties of metals, methods of extracting and refining, the formulation of alloys, and the application of the appropriate metals for current technological purposes.

I.S. 3471 Metalsmithing I (3) Staff
Introduction to the development of hand wrought metal objects.

I.S. 4472 Metalsmithing II (3) Staff
A continuation of I.S. 3471, which is prerequisite.

Electronics

I.S. 1500 Elements of Electronics (2) Cokewood, Jahn
Technology of electronics through examination of its most basic concepts and fundamentals. Laboratory units allow the student to apply learnings, conduct quantitative measurements, gain experience in using electronic test instruments, and develop ability to write effective technical reports.

I.S. 2500 General Electricity-Electronics (3) Cokewood, Jahn
Practical understanding and application of the electrical-electronic concepts found in all areas of industrial education.
Prerequisite: I.S. 1500.

I.S. 2501 Circuit Analysis I (4) Cokewood, Jahn
Review of electrical fundamentals and detailed analysis of circuits and circuit elements energized by steady-state and transient d-c voltage sources.
Prerequisite: I.S. 1500.

I.S. 2502 Circuit Analysis II (4) Cokewood, Jahn
Principles governing the behavior of d-c circuits and components extended to consider circuits energized by alternating voltages.
Prerequisite: I.S. 2501.

I.S. 3503 Electron Tubes and Semiconductors (4) Staff
Emphasis on the study of electron devices as devices. Physical principles of operation, electrical behavior, parameters, and ratings constitute the consideration given to each type of device studied.
Prerequisite: I.S. 2501.

I.S. 3504 Circuit-Systems I (3) Staff
Designed to treat selected applications into which electron devices and circuit elements can be combined. Circuit-systems of a general nature or those found in many common applications are given special emphasis.
Prerequisite: I.S. 2502, 3503.

I.S. 4505 Circuit-Systems II (3) Staff
Continuation of the concepts developed in Circuit-Systems I with increasing emphasis upon more specialized and advanced systems.
Prerequisite: I.S. 3504.

I.S. 4506 Fabrication and Development of Electronic Devices (3) Staff
Basic skills and information necessary for the fabrication, design, and troubleshooting of all types of electronic devices, prototypes, chassis, and racks. Content will in part be determined by particular interests and abilities of the students, who will fabricate operational models or teaching aids for their personal use.
Prerequisite: I.S. 3504.

I.S. 4507 Fundamentals of Solid State Circuit Design (3) Staff
Basic circuit design equations, concepts and procedures applied to actual solid state circuit design problems. Bias stabilization techniques, feedback circuits, small and large signal amplifiers, motor speed controls and light dimmer circuits.

Graphics

I.S. 1600 Elements of Graphics (2) Angebrandt
Experiences in the fundamentals of letterpress printing, screen process reproduction and offset lithography.

I.S. 2601 Advanced Letterpress Reproduction (3) Angebrandt
Designed to provide the student with a comprehensive background of knowledge and experience in the various aspects of letterpress printing.
Prerequisite: I.S. 1600.

I.S. 2602 Screen Process Reproduction (3) Angebrandt
A background in screen process printing and experiences in related photo mechanics.
Prerequisite: I.S. 1600.

I.S. 3603 Black and White Photographic Reproduction (3) Staff
Background in basic photography with emphasis on camera technique, photographic composition, and darkroom operation.
Prerequisite: I.S. 2602.

I.S. 3604-3605 Color Photographic Reproduction I and II (3, 3) Staff
Advanced course of photography with emphasis on light and its evaluation, color transparency exposure and development, color negative development and enlargement, and densimetric controls for quality work.
Prerequisite: I.S. 3603.

I.S. 4606-4607 Lithographic Reproduction I and II (3, 3) Staff
Opportunity to develop skills and technical information essential to the area of offset lithography.
Prerequisite: I.S. 2602.

I.S. 4608-4609 Color Separation I and II (3, 3) Staff
Comprehensive understanding of the principles of color separation and its utilization in the graphic arts.
Prerequisite: I.S. 3605 and 4607.

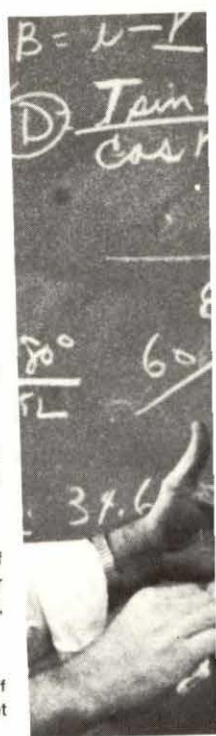
Power

I.S. 1700 Elements of Power (2) Staff
Introduction to the influences of power mechanics on contemporary industrial society. Laboratory units include internal and external combustion engines, fluid power and power transmission.

Comprehensive

I.S. 3803 Plastics (3) Staff
A study of various thermosetting and thermo-plastic materials and their basic processes of fabrication.

I.S. 3804 Crafts (3) Staff
A study of historical and contemporary crafts, their craftsmen and the development of handcrafted objects consistent with the best dictates of contemporary society.



Technology

I.S. 2900 Preparation of Technical Documents (3)

Staff

Advanced writing in scientific and technical fields; technical reports and papers, requisition procedures, personnel evaluations and other communicative experiences of value to the technical oriented man.

I.S. 3900 Industrial Statistics and Quality Control (3)

Staff

Introduction to the controlling of quality through the use of statistical methods. The application of significance tests, correlation analysis, analysis of variance, principles of reliability and sampling procedures.

Prerequisite: Math. 1052.

I.S. 4900 Industrial Safety (3)

Staff

Basic fundamental principles of industrial accident prevention; significant accident statistics and costs; appraising safety performances; industrial plant hazards and safeguards: fine control fundamentals.

I.S. 4910 Industrial Law (3)

Staff

Basic fundamental principles of industrial law including the following areas: introduction, business organizations, contracts, uniform commercial code (sales), bankruptcy and insolvency, environmental law.

Prerequisite: Junior or senior standing.

Interdisciplinary Major in Medical Technology

Coordinator: R. Schuhmacher

This Bachelor of Science degree program, offered in cooperation with the New Jersey Medical School and Martland Hospital, prepares students to pass the national examination for certifications as Medical Technologist by the American Society of Clinical Pathologists. The technologist is a professional member of the health care team who is prepared to contribute to the study and diagnosis of disease, train and supervise sub-professional laboratory workers and direct and evaluate clinical laboratory procedures using complex instruments. Medical technologists are needed to fill vital posts in hospitals, laboratories and clinics.

In the first three years of the program the student must meet general education requirements, major department and cognate requirements at Newark State College at Union as preparation for the fourth or clinical year at Martland Hospital. Students who are biology or chemistry majors may apply to elect the clinical year if they have met the pre-clinical requirements as outlined below.

Major in Medical Technology
Preprofessional Biology Option

	semester hours
GENERAL EDUCATION REQUIREMENTS (see page 27)	36
Required Cognate Courses	
<i>Within the sciences and mathematics cluster:</i>	7
One Mathematics course	3
Phys. 2091 General Physics I	4
ADDITIONAL COGNATE COURSES	19
<i>To be taken in the freshman and sophomore years:</i>	
Math. 2411 Calculus I	3
Phys. 2092 General Physics II	4
Chem. 1083-1084 Chemistry I and II	8
Chem. 2180 Principles of Organic Chemistry	4
MAJOR REQUIREMENTS	68
Required Biology Courses	38
Bio. 1000 Principles of Biology	4
Bio. 2000 Cell Biology	4
<i>The above should be taken during the freshman year.</i>	
Bio. 2403-2404 Human Physiology and Anatomy I and II	8
Bio. 2500 Principles of Botany	4
Bio. 3305 Principles of Microbiology	4
Bio. 3414 The Invertebrates-Form and Function or	
Bio. 3425 The Vertebrates-Form and Function	4
Bio. 3614 Principles of Ecology	3
Bio. 3704 Principles of Genetics	3
Bio. 4105 Essentials of Biochemistry	4
Clinical Year Required Courses at Martland Hospital	30
Instruction and clinical practice (2000 hours) in chemistry, medical microbiology, clinical microscopy, ethics, hematology, immuno-hematology, immuno-serology, management and records, mathematics and instrumentation, radioisotopes.	
ELECTIVE	1

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Major in Medical Technology
Preprofessional Chemistry Option

	semester hours
GENERAL EDUCATION REQUIREMENTS (see page 27)	36
Required Cognate Courses	7
<i>Within the Sciences and Mathematics Cluster:</i>	
Bio. 1000 Principles of Biology	4
Math. 2411 Calculus I	3
ADDITIONAL COGNATE COURSES	27
Bio. 2200 Cell Biology	4
Bio. 2403-2404 Human Anatomy and Physiology	8
Bio. 3305 Principles of Microbiology	4
Math. 2412 Calculus II	3
Phys. 209102092 General Physics I and II	8
MAJOR REQUIREMENTS	62
Required Courses in Chemistry and Biology	32
Chem. 1083-1084 General Chemistry	8
Chem. 2181-2182 Organic Chemistry Lecture I and II	6
Chem. 2185-2186 Brief Organic Chemistry Laboratory I and II	2
Chem. 2283 Quantitative Analysis	4
Chem. 3301 Principles of Physical Chemistry	4
Chem. 3681 Inorganic Chemistry	4
Bio. 4105 Biochemistry	4
Clinical Year Required Courses at Martland Hospital	30
Instruction and clinical practice (2000 hours) in chemistry, medical microbiology, clinical microscopy, ethics, hematology, immuno-hematology, immuno-serology, management and records, mathematics and instrumentation, radioisotopes.	

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Collateral Program in Afro-American Studies

This program is offered to all students interested in an interdisciplinary approach to the study of the Black experience in America. The program can be taken only in conjunction with a major academic curriculum and is set up individually for each student.

	semester hours
REQUIRED AREAS 6 hours from each of the following groups:	12
HUMANITIES	
Eng. 3200 Literature of the American Negro	3
F.A. 3780 History of African Art	3
Mus. 2230 African Music Tradition	3
* Foundations of Black African Thoughts	3
* Black Theater	3
BEHAVIORAL AND SOCIAL SCIENCES	
Eco. 2900 Economics of Poverty	3
Hist. 2500 Survey of African History and Pre-History	3
Hist. 2510 Political History of Africa in the 20th Century	3
Hist. 3305 History of the Black American	3
Pol. Sci. 2120 Urban Political Systems	3
Soc. 2300 Racial and Cultural Minorities	3
Soc. 3150 Urban Sociology	3
ELECTIVES Any of the courses not used to fulfill the requirements above may be used as electives	minimum 6
E.C. 4210 Guiding Early Childhood Teachers to Work with Children from Minority Cultures	3
Ed. Psy. 3802 Educational Psychology of the Disadvantaged Urban Child	3
E.P.S. 4050 Urban Education	3
E.P.S. 4060 Education in the Non-Western World	3
Soc. 2310 Sociology of Poverty	3
S.W. 2900 Introduction to Social Work	3
S.W. 3950 Methods of Social Work I	3

Collateral Program in Bilingual (Spanish-English) Education

Coordinator: G. Hidalgo

This program is offered primarily to students interested in teaching Spanish speaking children in the urban areas and is usually taken in conjunction with an elementary education major. It is also open to other Education and Arts and Sciences majors.

To be eligible for the program, a sufficient knowledge of Spanish and English must be demonstrated by the end of the sophomore year. Candidates will be interviewed and examined for oral and reading competency.

	semester hours
Required Courses	9
E.A.S. 3150 Introduction to Bilingual Education	3
E.A.S. 3151 Teaching Techniques for Bicultural Schools	3
E.A.S. 3710 Teaching English as a Second Language	3
Electives select 12 hours with specific advisement from the following:	12
Eng. 3105 Language, Meaning and Human Behavior	3
Eng. 3110 Descriptive American English Grammar	3
E.P.S. 4250 Urban Education	3
Hist. 4383 History of Caribbean World	3
Soc. 2500 Racial and Cultural Minorities	3
Soc. 2720 The Subculture of Poverty	3
Sp. 4100 Spanish Grammar Morphology and Syntax	3
Sp. 4420 Spanish American Poetry	3
Sp. 4425 The Essay in Spanish America	3

Collateral Program for the Study of the Future

Executive Director: H. Didsbury Jr.

In broad outline, a program for the study of the future is based upon at least two major principles:

an examination of the historical matrix which produced modern industrial civilization;

recognition of the need to develop a sensitivity for anticipating consequences resulting from the expansion and sophistication of what has been variously termed "industrial civilization" or "the technological society."

The spirit which animates such a program is the conviction that an effort must be made to go beyond a command of mere knowledge and the ability to manipulate concepts and strive for the development of intuition and creative insight which ultimately finds fruition in concrete action.

Essentially, the program is built around three courses which may be conceived of as a core of future studies:

Hist. 3870 Dreams and Nightmares: Utopias and History

Hist. 4870 Planning for Tomorrow Today: Alternative Futures

I.D. 3900 Interdisciplinary Seminar on Futurism

The emphasis throughout is upon flexibility and novelty. The interdisciplinary character and professional expertise of the program is strengthened by the resources of an advisory council comprised of distinguished leaders in the academic, scientific, professional and business fields.

To serve the wider community, the Program for the Study of the Future sponsors conferences and symposia which explore aspects of education, employment, communications and human development and control which may have significant impact on society.

The Program for the Study of the Future is designed to make it possible for students to acquaint themselves with the latest and most authoritative thought on the prospects before the human race as it moves forward in time. Hopefully, it may contribute to a genuine awareness of the range of possibilities before man on the threshold of the 21st century.

International Education

Student Exchange Programs 1973-1974

Coordinator: E. J. Williams

In conjunction with the New Jersey State Colleges Council for International Education, Newark State provides an international study program to eligible sophomores and juniors. A 2.5 minimum cumulative average is required. Applications and further information on these programs and other opportunities for overseas travel are available through Mr. Williams.

Copenhagen Spring Semester. Students are taught in English by bilingual professors from the University of Copenhagen and other Danish institutions of higher learning. Four or five courses (12 or 15 credits) are selected from a total of eighteen offered in history, social sciences, education, philosophy, art, music, and literature. Students are housed with Danish families or in dormitories located near the University. A fixed charge for the semester of \$1495 covers tuition, lodging, food and round-trip from New York. Low-cost trips throughout Europe during school holidays are provided by a Danish student group. *Application deadline for Spring 1974: October 1, 1973*

Great Britain Fall Semester at six English Colleges and Bath University of Technology, Bath, England. The typical curriculum at the six Colleges includes the usual British sequence of three subject areas, chiefly English literature, history but also incorporating fine art, science, mathematics, and comparative education. Credit is granted for sixteen semester hours of work. The University programs include mathematics, chemistry, economics, and sociology. Students are housed either in dormitories or private homes near the Colleges. Round-trip from New York, tuition, room and board: \$900.00. *Application deadline for Fall 1974: February 28, 1974*

Mexico Fall and Spring Semester or the entire academic year at the University of the Americas. This is one of the first of a network of centers which the American Association of State Colleges and Universities will ultimately establish around the world. The University is housed on a new 164 acre campus on the outskirts of Puebla, the fourth largest city in Mexico, and is just over an hour's drive from Mexico City. Its 26 new buildings include the College of Arts and Sciences, the Technological Institute — the School of Graduate Studies, the Center of Fine Arts and Anthropological Sciences, and the Learning Resources Center. Students will live in one of 16 residence halls, in suites consisting of four bedrooms, bath and a central parlor.

The University is non-denominational and co-educational with a strong liberal arts curriculum and a bilingual faculty. Over 40 nationalities are represented in its student body. It is affiliated with the Southern Association of Colleges and Schools.

	Academic Year	Per Quarter	Per Semester
Tuition and Fees	\$ 974	\$358	\$537
Room and Board	<u>720</u>	<u>240</u>	<u>360</u>
	\$1694	\$598	\$897

Interdisciplinary Collateral Program in Urban Studies

Director: H. Furer

This program is conceived on broad interdisciplinary lines in order to provide comprehensive preparation for those interested in the study of American urban life. It may be taken in conjunction with any major academic curriculum and includes a one semester field experience internship in a city agency.

Most of the courses offered in the program have prerequisites. It is advisable, therefore, that prerequisite courses be taken when fulfilling general education requirements.

semester hours

Required Courses

Hist. 4361 History of the American City	3	9
Hist. 4991 Seminar on the City	6	

Electives to be selected when advisement for appropriateness to the student's major:

Bio. 2601 The Ecological Environment and Man	4	15
E.C. 4210 Guiding Early Childhood Teachers to Work from Minority Cultures	3	
E.A.S. 3710 Teaching English as a Second Language	3	
E.P.S. 4050 Urban Education	3	
Ed. Psy. 3801 Educational Psychology of the Disadvantaged Urban Child	3	
Econ. 2800 Labor Economics	3	
Econ. 2900 The Economics of Poverty	3	
Econ. 3320 Public Finance	3	
Econ. 3930 Urban Economics	3	
Mgt. Sci. 3410 Marketing	3	
Geog. 3410 Urban Geography	3	
Geog. 3420 The Resource Base and the Urban Pattern	3	
Geog. 3430 Urban-Suburban Relationships	3	
Geog. 4410 Regional and Metropolitan Planning	3	
Eng. 3200 Literature of the American Negro	3	
F.A. 3150 Design and Urban Environment	3	
F.A. 3160 Art and the Home	3	
H.Ed. 3235 Introduction to Public Health	2	
H.Ed. 4333 Alcohol and Narcotics Education	2	

Hist. 3305 The History of the Black American	3
Hist. 3330 The Labor Movement in America: 1864 to present	3
Hist. 3340 20th Century America	3
Hist. 3851 Alienated Youth, Past and Present	3
Hist. 4367 The History of American Immigration	3
Hist. 4328 Dissent, Crisis and Consensus in American History	3
Hist. 4870 Planning for Tomorrow, Today: Alternative Futures	3
Pol. Sci. 2100 American State and Local Political Systems	3
Pol. Sci. 3600 Public Administration: The Bureaucratic Process and the Political System	3
Pol. Sci. 3700 The Urban Political System: Politics and Problems	3
Psy. 3630 Social Psychology	3
Soc. 2100 Sociology of the Family	3
Soc. 2300 Racial and Cultural Minorities	3
Soc. 2705 Juvenile Delinquency	3
Soc. 2710 Criminology	3
Soc. 2800 The Sociology of Poverty	3
Soc. 3150 Urban Sociology	3
Soc. 3160 American Society	3
Soc. 3200 Industrial Sociology of Work	3
S.W. 2900 Introduction to Social Work	3
S.W. 3900 Contemporary Social Policy and Services	3
S.W. 3950 Methods of Social Work I	3
S.W. 4900 Field Experience Seminar in Social Welfare	3

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Interdisciplinary Courses

I.D. 3900 Interdisciplinary Seminar on Futurism (3)

Didsbury

Emphasis placed upon integrating a wide variety of approaches and a number of disciplines focused on problems and prospects of the future. Each student pursues an appropriate project, the results of which may be expressed through a paper, film, recording or the use of other suitable media, for presentation to the seminar. Areas of special concern: computer technology and its application to learning and planning; current brain research; social change; biological breakthrough; ecological planning.

I.D. 4051 Art for the Exceptional Child (3)

Staff

Stresses the application of theories of art, special education and related disciplines within educational settings, for the exceptional child.

Prerequisite: Undergraduate degree in one of the following: art, special education, psychology or equivalent as determined by instructor.

I.D. 4850 Interrelating the Arts (3)

Staff

Interrelationships of form and content in the expressive arts, studied through personal involvement in the visual arts, dance, music and drama.

Prerequisite: Two courses in the areas of art, music, dance or drama.

Faculty: Abeles, Cash, Garb, Giegerich, Goldberg, Hothersall, Kinsella, Krantz, J. Levine (Chairman), Lipson, Malbrock, Marchand, Plotkin, Santamauro, Wertheimer, Zoll

The courses of instruction offered by the Mathematics Department are designed to fulfill several objectives:

- to develop those principles of mathematics especially useful to students of the natural and social sciences;
- to foster a deeper appreciation and understanding of the significance of mathematics and its relevance to other fields of human endeavor;
- to provide a major program with various emphases so that a student might acquire the background necessary for the fields of applied mathematics, computer science, teaching of secondary school mathematics and graduate studies in mathematics.

This is achieved, with the advice of the department, through the appropriate selection of electives.

Students interested in teaching must also elect the Collateral Program in Secondary Education.

Major in Mathematics

	semester hours
GENERAL EDUCATION REQUIREMENTS (see page 27)	36
<i>Within the Sciences and Mathematics Cluster:</i>	3
Math. 2408 Introduction to Functions 11 or Math. 2412 Calculus II	
MAJOR REQUIREMENTS	30
Required Courses	15
Math. 2103 Real Number System	3
Math. 3247 Abstract Algebra I	3
Math. 3248 Abstract Algebra II	3
Math. 3451 Calculus III	3
Math. 3452 Calculus IV	3
Major Electives to be selected with departmental advisement from course on the 2000 level or above.	
ELECTIVES (see page 28)	58

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Major in Mathematics Applied Mathematics Option

	semester hours
GENERAL EDUCATION REQUIREMENTS (see page 27)	36
<i>Within the Sciences and Mathematics cluster:</i>	3
Math. 2408 Introduction to Functions II or Math. 2412 Calculus II	
MAJOR REQUIREMENTS	30
Required Courses	15
Math. 2103 Real Number System	3
Math. 3247 Abstract Algebra	3
Math. 3248 Abstract Algebra II	3
Math. 3451 Calculus III	3
Math. 3452 Calculus IV	3
Major Electives to be selected with departmental advisement from the following:	15
Math. 2275 Matrix Algebra	3
Math. 3215 Linear Algebra	3
Math. 3544 Probability	3
Math. 4216 Linear Transformations and Matrices	3
Math. 4403 Differential Equations	3
Math. 4404 Introduction to Applied Mathematics	3
Math. 4465 Functions of a Complex Variable	3
Math. 4545 Mathematical Statistics	3
Other courses may be selected from computer science, mathematics, biological, physical, behavioral and/or political sciences, economics, and/or industrial technology that entail mathematical applications.	
ELECTIVES (see page 28)	58

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Minor in Mathematics

Students desiring a minor in mathematics may fulfill the requirements of a minimum of 18 semester hours, 12 semester hours of which must be at the 2000 level or above. Only Math. 1052 and 1053 may be included on the 1000 level.



Major in Mathematics Computer Science Option

	semester hours
GENERAL EDUCATION REQUIREMENTS (see page 27)	36
<i>Within the Sciences and Mathematics Cluster:</i>	
Math. 2408 Introduction to Functions II or Math. 2412 Calculus II	3
MAJOR REQUIREMENTS	30
Required Courses	15
Math. 2103 Real Number System	3
Math. 3247 Abstract Algebra I	3
Math. 3248 Abstract Algebra II	3
Math. 3451 Calculus III	3
Math. 3452 Calculus IV	3
Major Electives to be selected with departmental advisement from the following:	15
Math. 2275 Matrix Algebra	3
Math. 3941 Numerical Analysis	3
Comp. Sci. 3993 Computer Programming I	3
Comp. Sci. 3994 Computer Programming II	3
Comp. Sci. 4995 Computer Assembler Language	3
Math. 4800 Elements of Graph Theory	3
Other electives may consist of six semester hours of 3000 level courses in mathematics and/or computer science; nine semester hours of 4000 level courses in computer science.	
ELECTIVES (see page 28)	58
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Minor in Computer Science

	semester hours
Required Courses	12
Math. 2275 Matrix Algebra	3
Math. 3941 Numerical Analysis	3
Comp. Sci. 3993 Computer Programming I	3
Comp. Sci. 3994 Computer Programming II	3
Electives	6
Any two additional courses from the computer science area, exclusive of Math. 1931.	
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Major in Computer Science

The courses of instruction in Computer Science are designed to provide for a major program with various emphases so that a student may select a background for the areas that follow:
 data processing related to business, economics and/or management science;
 technology related to physics, electronics and/or mathematics with investigations related to computer architecture;
 mathematics with computer applications;
 graduate studies in Computer Science.

Data Processing Option

	semester hours
GENERAL EDUCATION REQUIREMENTS (see page 27)	36
COGNATE COURSES	12
Economics and/or Management Science	
MAJOR REQUIREMENTS	30
Required Courses	9
Comp. Sci. 1932 Principles and Procedures of Electronic Data Processing	3
Comp. Sci. 3993-3994 Computer Programming I and II	6
Major Electives to be selected with advisement from the courses listed under Computer Science.	21
ELECTIVES (see page 28)	46
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Technology Option

	semester hours
GENERAL EDUCATION REQUIREMENTS (see page 27)	36
COGNATE COURSES	12
Physics, Electronics and/or Mathematics	
MAJOR REQUIREMENTS	30
Required Courses	10
Comp. Sci. 3900 Digital Computer Circuit Principles	4
Comp. Sci. 3993-3994 Computer Programming I and II	6
Major Electives to be selected with advisement from courses listed under Computer Science.	20
ELECTIVES (see page 28)	46

Elementary Mathematics

Math. 1011 Number Theory in Elementary Mathematics (3) Staff

The study of the properties of prime numbers has intrigued professional as well as amateur mathematicians. Many of these ideas about prime numbers can be used in developing interest and creativity in elementary school mathematics. Other topics include: Figurate numbers, composite numbers, factorization methods, modular arithmetic, Euler's function. For non-mathematics majors.

Math. 1012 Sets and Logic in Elementary Mathematics (3) Staff

Elementary set operations and the laws of logic. Applications to probability theory. For non-mathematics majors.

Math. 1014 Elementary Number Systems (3) Staff

The postulates of the natural numbers, the integers, and the rational numbers are studied. Elementary set operations and historical numeration systems are also included. For non-mathematics majors.

Math. 1016 Descriptive Statistics (3) Staff

Graphic treatment of data; mean, median, mode; variance, standard deviation, and correlation. Non-parametric techniques such as chi-square and rho are included.

Math. 1052 Colle Algebra and Trigonometry (3) Staff

Systems of equations and inequalities are solved by the using of the axioms of the Real Number system, matrices and determinants, and elementary theory of equations. The properties of the complex numbers, mathematical induction, and the Binomial Theorem are also studied. Algebraic, logarithmic, exponential and trigonometric functions are examined with emphasis on trigonometric identities and jtrigonometric analysis. Prerequisite: 3 years of secondary school mathematics.

Math. 1053 Analytic Geometry (3) Staff

Study of algebraic representations of points, lines and conic sections. Transformations, polar coordinates, parametric representations, solid analytic geometry. Prerequisite: Math. 1052 or 3½ years of secondary school mathematics.

Logic and Foundations

Math. 2103 Real Number System (3) Staff

An introduction to the study of mathematical structures related to the real numbers. Topics include: groups, rings, integral domains and field; relations and functions; fundamental concepts of two-valued logic and set algebra; sequence, series and limits; Dedekind cuts and Cauchy sequences. Prerequisite: Three years of secondary school mathematics.

Math. 3155 Mathematical Logic (3) Krantz, Levine

Logic provides the mathematician with the manner for judging simple and compound statements. Recent developments in computers place heavy stress upon the understanding of the tools of logic. Course includes Statement Calculus and Predicate Calculus, as well as their applications. Prerequisite: Math. 2412 or permission of the instructor.

Algebra

Math. 2275 Matrix Algebra (3) Geigerich, Levine

Characteristics of a matrix. Arithmetic operations. Determinant of a square matrix. Equivalence, systems of linear equations, vector space, vectors, linear equations, inner products, and matrices. Matrices and polynomials, infinite series, eigenvalues and eigenvectors. Selected applications. Prerequisite or corequisite: Math. 2412 or permission of instructor.

Math. 3215 (4215) Linear Algebra (3) Abeles, Levine

The basic theory of finite dimensional vector spaces, of linear transformations and of the associated matrix algebra. Geometric applications of the theory emphasized. Prerequisite: Math. 2412 or permission of the instructor. Math. 2275 recommended.

Math. 3247 Abstract Algebra I (3) Staff

Elementary group theory, including Cayley's Theorem, Jordan-Holder Theorem, Sylow's Theorems. Ideals and Quotient Rings. Euclidean and Polynomial Rings. Prerequisite: Math. 2103 or permission of instructor.

Math. 3248 Abstract Algebra II (3) Staff

Fields and extensions. Vector spaces and modules. Field automorphisms. Galois fields. Galois theory. Theorems of Wedderburn and Frobenius. Prerequisite: Math. 3247 or permission of instructor.

Math. 4216 Linear Transformations and Matrices (3) Abeles

A continuation of the theory developed in Linear Algebra. Topics could include: homomorphisms of vector spaces, rank and nullity of a linear transformation, dual space, operations of linear systems, equivalence relations on matrices, canonical forms, conjugate bilinear functions, hermitian and quadratic forms. Prerequisite: Math. 3215.

Geometry

Math. 2341 Modern College Geometry I (3) Abeles

A survey of euclidean, similarity and affine geometries. Central to the study is the concept of a transformation. The handling of geometric transformation is primarily analytic. Groups of transformations are discussed. Prerequisite: Math. 1053 or Math. 2408.

Math. 2342 Modern College Geometry II (3) Abeles

A continuation of the survey developed in Math. 2341 to cover projective and topological transformations. Prerequisite: Math. 2341.

Math. 2346 Modern Euclidean Geometry (3) Staff

Circle of Apollonius, Ceva's Theorem, Menelaus' Theorem, homothetics, inversion, and Apollonius' problem are some of the topics studied in this course.

Math. 4361 Toplogy (3) Abeles, Cash

A survey of the fundamental concepts of general (point-set) topology is presented to provide an introduction to the subject matter of set theoretic topology, as well as to serve as a foundation for advanced analysis. Emphasis is placed on euclidean metric spaces, continuous functions, topological spaces, topologization, homeomorphisms, connectedness and compactness. Prerequisite: Math. 3451 or permission of instructor.

Math. 4362 Combinatorial Topology (3) Abeles, Cash

An algebraic and combinatorial approach to the topology of networks, surfaces and polyhedra; applications to complex analysis. Prerequisite: Math. 3451.

Analysis

Math. 2407 Introduction to Functions I (3) Staff
Sets, logic, relations, functions, real numbers, ordered fields, graphs, and polynomials.
Prerequisite: 3 years of secondary school mathematics.

Math. 2408 Introduction to Functions II (3) Staff
Trigonometric functions, exponential functions, inverse functions, analytic geometry, 2- and 3-dimensional vectors.
Prerequisite: Math. 2407.

Math. 2411 Calculus I (3) Staff
The meaning and use of the derivative and differential, related to algebraic functions are studied. The concepts of function, limits, continuity and the derivative, sequences and their limits are also presented. Applications of the derivative includes the tangent and normal to the curve and the problems in maximum and minimum.
Prerequisite: Math. 2408 or equivalent or permission of the instructor.

Math. 2412 Calculus II (3) Staff
Integration of algebraic functions, transcendental functions, including trigonometric and logarithmic functions and application to areas enclosed by plane curves, lengths of curves, areas and volumes of solids of revolution are among the topics studied.
Prerequisite: Math. 2411 or permission of instructor.

Math. 3451 Calculus III (3) Hothersall, Krantz
The study of functions of several real variables, partial differentiation, multiple integration, infinite sequences and series, indeterminate forms and an introduction to the algebra of vectors.
Prerequisite: Math. 2412 or permission of instructor.

Math. 3452 Calculus IV (3) Hothersall, Krantz
Calculus of vector functions, generalizes integrals, further applications of integration, approximations, the theorems of Green, Gauss, and Stokes, and introductions to linear algebra and differential equations.
Prerequisite: Math. 3451 or permission of the instructor.

Math. 4403 Differential Equations (3) Krantz
First order equations, special methods, linear equations, Laplace transforms are some of the topics studied.
Prerequisite: Math. 3451 or permission of the instructor.

Math. 4404 Introduction to Applied Mathematics (3) Krantz
Study of power series solution of differential equations, Bessel functions, Legendre polynomials, partial differential equations, boundary value problems, Fourier series and integrals, the Sturm-Liouville problem and the Gamma and Beta functions.
Prerequisite: Math. 4403.

Math. 4465 Functions of a Complex Variable (3)
One of the most aesthetic, as well as practical branches of mathematics, the theory of complex functions includes the study of complex numbers and the geometry of the Argand plane. Analytic functions, elementary functions and transformations, complex integration, power series, residues, poles and an introduction to conformal mapping are the principal topics.
Prerequisite: Math. 3452 or the equivalent.

Probability and Statistics

Math. 3544 Probability (3) Kinsella
The major topics are discrete and continuous random variables; conditional probability and independence; functions of random variables; mathematical expectation; the moment-generating functions; and the study of important distributions, such as the binomial, Poisson, normal, gamma, and chi-square. Applications are included.
Prerequisite: Math. 2412.

Math. 4545 Mathematical Statistics (3) Kinsella
Discrete and continuous random variables. Functions of random variables. Two-dimensional random variables. Expected values and variance of random variables and functions. Correlation and regression. Normal, gamma, and chi square distributions. The moment-generating function. Samples and sampling distributions. Estimating parameters. Testing hypotheses.
Prerequisite: Math. 3544.

Number Theory

Math. 3624 Number Theory (3) Staff
Survey of the elementary arithmetic of the integers-prime numbers, factorization, congruence, Diophantine equations — with some historical study of important problems.
Prerequisite or corequisite: Math. 3451.

Applications

Math. 3891 History of Mathematics (3) Kinsella
A study of the evolution of the major concepts and processes associated with elementary mathematics from arithmetic through the calculus. Special attention is given to number, algebra, early-Greek geometry, analytic geometry, "famous problems", and the work and lives of the great mathematicians.
Prerequisite: Math. 2412.

Math. 4800 Elements of Graph Theory (3) Abeles, Levine
Basic concepts and characteristics of special graphs, trees, networks, fundamental numbers and interdisciplinary applications.
Prerequisites: Math. 3215 or Math. 2275, or by permission of the instructor.
Recommended: Comp. Sci. 3994 or taken concurrently.

Math. 4809 Special Topics in Mathematics (3)
Research study of areas in mathematics influenced by contemporary developments as well as interests and needs of students majoring in mathematics.
Prerequisite: Permission of the instructor.

Computer Science

- Math. 1931 Computer Arithmetic Algorithms (3)** Staff
Historical development of computers, components of electronic data processing equipment, flow charting, programming, keypunching, and verifying arithmetic algorithms for electronic digital processing, debugging and analysis of results related to processed algorithms form a basis to the content of computerized arithmetic algorithms. This course is designed specifically for non-mathematics majors. Laboratory facilities allow for a maximum of 20 students per section.
- Math. 1932 Principles and Procedures of Electronic Data Processing (3)** Garb
Fundamental principles and procedures of electronic data processing include: historical development of electronic machines, punched-card data processing, machine language coding, systems analysis and procedure, flow charts, utilization of coded-data representation for arithmetic and control units, and programming scientific and sequential information for various kinds of electronic machines.
Prerequisite: Math. 1931 or 3993.
- Comp. Sci. 3900 Digital Computer Circuit Principles (4)** Jahn, Silano
A one semester lecture and laboratory which emphasizes the theory and application of switching circuits, electron devices as logic elements, and the arrangement of these elements in digital computer systems.
Prerequisite: Phys. 3393, I.E. 3503 or permission of the instructor.
- Math. 3941 Numerical Analysis (3)** Garb
Basic operations of numerical computation related to aspects of elementary mathematical operations, approximation and exact data, interpolation, error analysis, recursion formulas, sequences and series, quadrature, linear and non-linear equations, numerical differentiation, and ordinary differential equations comprise this course. Consideration is also given to the impact of computers, both electronic and manual, from the standpoint of efficiency, accuracy, and suitability to processing problems for solution sets.
Prerequisite or corequisite: Math. 3451. Comp. Sci. 3993 recommended.
- Math. 3942 Numerical Calculus (3)** Garb
Basic notions of developing computer algorithms for the solution to numerical calculations which entail; error analysis, polynomial approximations, composite integration formulas, quadrature, Newton's Method, Bisection method, linear system of equations, solution of non-linear equations, and numerical solution of ordinary differential equations. Computational aspects of problems are processed via the computer applying an adaptable machine-oriented language.
Prerequisite: Math. 3941 and Comp. Sci. 3993. May be taken with Comp. Sci. 3994. Math. 2275 and 3215 recommended.
- Comp. Sci. 3993 Computer Programming I (3)** Garb, Giegerich
Concepts of functions and algorithms in writing and key-punching programs that are processed on an electronic digital computer. Flow-charting; single-loop and nested loop processes; arithmetic processed, fixed-point, and floating-point arithmetic and non-numeric values; iteration and approximations; and non-numeric repetitive processes as applied to numerous types of elementary mathematical problems.
Prerequisite or corequisite: Math. 3941.
- Comp. Sci. 3994 Computer Programming II (3)** Garb, Geigerich
Double precision, complex, and logical values, predefined and written subroutines, n-dimensional arrays, subprograms, numeric, logical alphanumeric, literal and blank data, mixed mode, indexing, and optimized programs utilized in more intricate mathematical problems.
Prerequisite: Comp. Sci. 3993.

- Comp. Sci. 4900 Elements of Systems Programming (3)** Garb
Computer structure, machine languages, specifications of registers, instruction codes, structure of assemblers, symbol tables for structures and techniques, macro operators, data-flow circuits, input/output control, and selected applications.
Prerequisites: Comp. Sci. 3994 and 4995 recommended.
- Comp. Sci. 4910 Computer Programming Languages (3)** Garb
A study of characteristics of programming languages and classifications: machine, procedure-oriented, numerical, scientific, business data processing, string and list grammars, multipurpose, control and basic compiler methods.
Prerequisite: Comp. Sci. 4995.
- Comp. Sci. 4920 Compiler Construction (3)** Staff
Techniques in analysis of a source language and the generation of an object code, construction aspects of a compiler, as well as programming applications to compiler design.
Prerequisite: Comp. Sci. 4900 or 4995 or permission of the instructor.
- Comp. Sci. 4930 Data Communication Systems (3)** Staff
A survey of machines and devices that are utilized to communicate with and retrieve information from a computer.
Prerequisite: Comp. Sci. 3994.
- Comp. Sci. 4940 Data Structures (3)** Staff
Representation of information as inside and outside data to a computer, stacks, lists and strings, storage of arrays and orthogonal lists, tree structures, storage systems and allocations, sorting, symbol tables, searching and applications that illustrate computer storage of information utilized in solving problems.
Prerequisites: Comp. Sci. 3994 and 4995; Math. 4800 and Comp. Sci. 4900 recommended.
- Comp. Sci. 4950 Computer Operating Systems (3)** Staff
An introduction to basic computer elements and logic design techniques employed in computer systems organization.
Prerequisites: Comp. Sci. 3994 and 4995.
- Comp. Sci. 4960 Large-Scale Information Processing Systems (3)** Staff
Computers, data communication systems and networks utilized in establishing a large information processing system. Computer centers, information retrieval, real-time and time-sharing. Objectives of systems and their design, the establishment of programs and procedures and the testing and operation of all components in the integrated systems.
Prerequisites: Comp. Sci. 4930 and 4950 or permission of instructor.
- Comp. Sci. 4965 Problem Analysis and Solutions (3)** Staff
Identification and analysis of scientific, business and/or research oriented problems. Sequential organization of computer oriented algorithms for efficient procedures involving minimization of computer time.
Prerequisite: Comp. Sci. 3994.
- Comp. Sci. 4980 Special Topics in Computer Science (3)** Staff
Research study of areas in computer science influenced by contemporary developments as well as interests and needs of students majoring in computer science.
Prerequisite: Permission of instructor.
- Comp. Sci. 4995 Computer Assembler Language (3)** Garb
Basic principles of an assembler language for the computer comprise: Input/output instructions, the object program, arithmetic, machine language format, effective address, instruction statements, indexing, subroutines and disk storage techniques.
Prerequisite or corequisite: Comp. Sci. 3994.

Faculty: A. Brown, Cullen, Dorsey, Engelhard, Feldman, Gerrish, Golub (Chairman), Grace, Herron, Hoyle, A. G. Lewis, Montgomery, Platt, Price, Volpe, L. J. Zimmer.

The Music Department offers two courses of study: a liberal arts major with preparation for careers in various phases of music and an education major which meets state certification requirements for teaching public school music. Acceptance to the program involves a placement test and a satisfactory audition in a major performance area (voice or instrument).

Throughout the college years, each student pursues private studio lessons and performs before a jury during each final examination period. A comprehensive upper-divisional qualifying examination is given at the end of the sophomore year.

Performance in at least one music ensemble is required each semester: the voice or keyboard student in choral ensembles, the instrumentalist in the sectional ensemble within his performance field (string, woodwinds, brass, percussion) as well as in Concert Band or College Orchestra.

All music majors may participate as soloists at student recitals each year. They are encouraged to appear in a junior recital and are expected to present a senior recital. Attendance at music forums, students recitals and on-campus concerts is required.

Major in Music

	semester hours
GENERAL EDUCATION REQUIREMENTS (see page 27)	36
MAJOR REQUIREMENTS	41
Required Courses	36
Mus. 1101-1102 Music Theory I and II	6
Mus. 1201-1202 Music Literature and Materials I and II	4
Mus. 2103-2104 Music Theory III and IV	6
Mus. 2201-2202 Music History I and II	6
Mus. 3111 Form and Analysis	3
Mus. 36-- Private Studio Lessons	7
Mus. -8-- Ensemble	4
Major Electives selected from the following:	5
Mus. 3101 Counterpoint	2
Mus. 3102 Fugue	2
Mus. 3112 Analytical Techniques	3
Mus. 3121-3122 Conducting I and II	4
Mus. 3131-3132 Orchestration I and II	4
Mus. 3133 Instrumental Arranging	2
Mus. 3134 Choral Arranging	2
Mus. 3140 Composition	2
Music literature electives on 3200 and 4200 levels	3
ELECTIVES (see page 28)	47

Major in Music Education

	semester hours
GENERAL EDUCATION REQUIREMENTS (see page 27)	36
Required Cognate Courses	6
Eng. 1900 Speech	3
Psy. 1000 General Psychology	3
ADDITIONAL COGNATE COURSES	9
<i>Selected from clusters I, II and/or III in General Education Requirements. To include:</i>	
Psy. 2100 Child Psychology or	
Psy. 2110 Psychology of Adolescence	
MAJOR REQUIREMENTS	65
Required Courses	
Mus. 1101-1102 Music Theory I and II	6
Mus. 1201-1202 Music Literature and Materials I and II	4
Mus. 2103-2104 Music Theory III and IV	6
Mus. 2201-2202 Music History I and II	6
Mus. 3111 Form and Analysis	3
Mus. 36-- Private Studio Lessons	7
Mus. -8-- Ensemble	4
Mus. 1551-1552 Class Strings I and II	1
Mus. 1600 Class Woodwinds	½
Mus. 1650 Class Brass	½
Mus. 1690 Class Percussion	½
Mus. 3121-3122 Conducting I and II	4
Mus. 3131 Orchestration I	2
<i>One of the following:</i>	2
Mus. 3132 Orchestration II	
Mus. 3134 Choral Arranging	
Mus. 3140 Composition	
Non-keyboard students: Mus. 1511-1516 Class Piano I-VI or demonstrated proficiency level	
Instrumental students: Mus. 1501-4 Class I-IV or demonstrated proficiency level	
E.P.S. 2000 Introduction to Education	3
Ed. Psy. 3801 Educational Psychology	3
One course in Foundations: E.P.S. 4010-4070	3
Mus. 3310 Elementary School Music Methods	2
Mus. 3320 Secondary School Music Methods	2
Mus. 4300 Student Teaching	8
ELECTIVES (see page 28)	18
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Survey and Introduction

Mus. 1000 Music Survey (3)

Understanding of music through study of music elements, forms, terms, styles, composers, and representative compositions in class, outside listening and music performance attendance.
No prerequisites.

Staff

Mus. 1050 Music Fundamentals (3)

Introduction to rudiments of music and notation. Developing understanding of the music language and facility in music reading and aural perception, through class and individual vocal and instrumental practice and written work. This course is designed as preparation for Mus. 2305, 2310, music education courses required of early childhood and elementary education majors.

Staff

Theory and Musicianship

Mus. 1101-1102 Music Theory I and II (3,3)

Review of music fundamentals, notations and grammar, written and keyboard harmony, ear training, sight singing and dictation.
Prerequisite: music major curriculum or department consent.

Dorsey, Montgomery

Mus. 2103-2104 Music Theory III and IV (3,3)

Continuation of Mus. 1101-1102, including chromatic and post-functional harmony, possibly counterpoint and the beginning of original creative work.
Prerequisite: Mus. 1102 or equivalent.

Dorsey, Montgomery

Mus. 3101 Counterpoint (2)

Species and free 2- and 3-part counterpoint.
Prerequisite: Mus. 2104 or equivalent.

Montgomery

Mus. 3102 Fugue (2)

Invertible counterpoint and writing of complete 3- and 4-voice fugues.
Prerequisite: Mus. 3101 or equivalent.

Montgomery

Mus. 3111 Form and Analysis (3)

Tonal and structural analysis and study of formal design in music of different styles.
Prerequisite: Mus. 2104 or equivalent.

Golub

Mus. 3112 Analytical Techniques (3)

Analysis and study of large, complex contemporary works, possibly individual creative work.
Prerequisite: Mus. 3111 or equivalent.

Staff

Mus. 3121 Conducting I (2)

Applied study of basic time-beating patterns and hand signals through the medium of choral music.
Prerequisite: Mus. 2104 or equivalent.

Cullen, Huber

Mus. 3122 Conducting II (2)

Application of the skills and knowledge from Conducting I in the area of conducting choral, instrumental and combined groups.
Prerequisite: Mus. 3121 or equivalent.

Cullen, Huber

Mus. 3131 Orchestration I (2)

Instrumental ranges and playing characteristics, principles of scoring, reductions from full scores, and scoring for small instrumental ensembles.
Prerequisite: Mus. 2104 or equivalent.

Volpe

Mus. 3132 Orchestration II (2)

Continuation of Orchestration I. Scoring transcriptions or original compositions for full orchestra, possibly including solo with orchestra and voices with orchestra combinations.
Prerequisite: Mus. 3131 or equivalent.

Volpe

Mus. 3133 Instrumental Arranging (2)

Scoring for various instrumental combinations other than orchestra, including concert, stage, dance, jazz, band, chamber groups or various combos.
Prerequisite: Mus. 3131 or equivalent.

Zimmer

Mus. 3134 Choral Arranging (2)

Arranging for various vocal combinations with or without accompaniment, using works by others or original compositions.
Prerequisite: Mus. 3131 or equivalent.

Gerrish

Mus. 3140 Composition (2)

Technique and problems of composition for various performing media. May be repeated for credit.
Prerequisite: Mus. 2104 and submission of original compositions.

Gerrish, Montgomery, Zimmer

History and Literature

Mus. 1201-1202 Music Literature Materials I and II (2,2)

Review of music rudiments; introduction to music literature and styles through study of representative compositions. Development of critical and analytical listening faculties through class or outside listening and live performances.
Prerequisite: Music major curriculum or department consent.

Golub, Grace

Mus. 2201 Music History I (3)

Development of music in primitive ancient and exotic cultures, and in western civilization since the beginning of Christianity through 1750.
Prerequisite: Mus. 1000, Mus. 1202 or department consent.

Golub, Grace

Mus. 2202 Music History II (3)

Historic development of music since 1750 to the present.
Prerequisite: Mus. 1000, 2201 or department consent.

Golub, Grace

Mus. 2230 African Music Tradition (2)

Music of black Africa and its influence in shaping the music heritage of black Americans: plantation, gospel, spirituals, blues, jazz, rock, and soul.

Staff

Mus. 3210 Baroque Music (3)

Study of the music style and characteristic forms with examples from a cross-section of major composers and works of the period 1600-1750.
Prerequisite: Music major curriculum, Mus. 1000 or department consent.

Grace

Mus. 3220 Music in the Classical Era (3)

Study of the music style and characteristic forms with examples from a cross-section of major composers and works during the rococo and classical periods in music: 1750-1820's.
Prerequisite: Music major curriculum, Mus. 1000 or department consent.

Golub

Mus. 3230 Music in the Romantic Era (3)

Study of the music style and characteristic forms with examples from a cross-section of major composers and works of the 19th century.
Prerequisite: Music major curriculum, Mus. 1000 or department consent.

Golub

Mus. 3240 Contemporary Music (3)

Study of the main trends in the 20th century music with examples from representative contemporary composers and works.
Prerequisite: Music major curriculum, Mus. 1000 or department consent.

Staff

Mus. 3250 Jazz in American Culture: From Dixieland to Rock (3)

The development and influence of American Jazz from its beginnings in New Orleans to the present highlighting the musical styles of innovative vocalists and instrumentalists and their influence upon American culture.

Volpe



- Mus. 4200 Solo Voice Literature (3)** Brown
Study of representative concert works for solo voice of various periods, styles and national origins.
Prerequisite: Music major curriculum, Mus. 1000 or department consent.
- Mus. 4210 Choral Literature (3)** Cullen, Platt
Study of representative choral works, unaccompanied and accompanied, from the Middle Ages through the present, and characteristic forms used in the choral medium.
Prerequisite: Music major curriculum, Mus. 1000 or department consent.
- Mus. 4220 Opera Literature (3)** Huber
Development of opera since baroque through the present with detailed study of representative works and composers within the genre and references to other music stage works in various periods, styles and civilizations.
Prerequisite: Music major curriculum, Mus. 1000 or department consent.
- Mus. 4230 Keyboard Literature (3)** Feldman, Gerrish
Study of keyboard literature with emphasis on major keyboard works for piano and its predecessors from early organ music through the present.
Prerequisite: Music major curriculum, Mus. 1000 or department consent.
- Mus. 4240 Chamber Music Literature (3)** Hoyle
The evolution of small instrumental ensembles from Middle Ages through the present, with emphasis on the development of chamber music starting with the baroque, and study of representative works in the medium.
Prerequisite: Music major curriculum, Mus. 1000 or department consent.
- Mus. 4250 Symphonic Literature (3)** Grace
Development of the orchestral literature since the Baroque through the present, with the study of characteristic forms and representative works for orchestra.
Prerequisite: Music major curriculum, Mus. 1000 or department consent.
- Mus. 4260 Indian Classical Music (Sitar) (3)** Staff
The development of Indian classical music from antiquity to the present day, with the study of characteristic forms and representative works for the Sitar.
Prerequisite: Mus. 1000 or department consent.

Education

- Mus. 2305 Early Childhood Music Education (2)** Engelhard, Lewis
Music activities and materials for nursery school, kindergarten, and primary grades. Direct participation in singing and rhythmic activities, playing and reading music with simple melody instruments, use of the autoharp, rhythm instruments and recordings.
Prerequisite: Mus. 1050 or permission of the instructor.
- Mus. 2310 Elementary School Music Education (2)** Engelhard, Lewis, Platt
Music activities and materials for children in the elementary grades. Direct participation in singing and rhythmic activities, playing and reading music with simple melody instruments, use of the autoharp, rhythm instruments and recordings, use and evaluation of books and materials for music education on the elementary and grade school level.
Prerequisite: Mus. 1050 or permission of the instructor.
- Mus. 3310 Elementary School Music Methods (2)** Engelhard, Lewis
Music materials, textbooks, songs, classroom music procedure, beginning and intermediate choral and instrumental work for elementary and intermediate schools. Observation of classroom practices as preparation for practice teaching.
Prerequisite: Music education major curriculum.

- Mus. 3320 Secondary School Music Methods (2)** Lewis, Platt
Music courses in the secondary school, organization problems, methods, voice classification, music clubs, assembly programs, instrumental and choral groups, study and evaluation of existing texts and music materials.
Prerequisite: Music education major curriculum.

- Mus. 3330 Choral Methods (2)** Cullen
Administration of choral program: organization, procedures, rehearsal, technique regarding voice placement, tone quality, repertory, program planning, performance problems of style and interpretation.
Prerequisite: Mus. 3320.

- Mus. 3340 Instrumental Methods (2)** Herron, Price
Administration of instrumental program: organization, procedures, instrumental pedagogy, repertory, planning programs and special field activities, performance, problems of style and interpretation.
Prerequisite: Mus. 3320.

- Mus. 4300 Student Teaching (8)** Staff
Students will teach for a fifteen week period in both elementary and secondary schools.
Prerequisite: Music Education core requirements.

Therapy

- Mus. 3400 Therapeutic Use of Music (3)**
A study of music as a therapeutic means of dealing with exceptional children and adults.
Prerequisite: Sp. Ed. 2052.
- Mus. 3410 Music in Physical Therapy (3)**
Use of music in various rhythmic movements, dealing with all parts of the body. Theoretical musical notation. Use of instruments for the handicapped.
Prerequisite: Mus. 3400 or permission of instructor.
- Mus. 4400 Music for the Child in Special Education (3)**
Use of music in learning other subjects. i.e., mathematics, English and speech and development of conceptual learning.
Prerequisites: Mus. 3410 or permission of instructor.



Class Lessons

Class lessons in basic performance technique, once a week (75 minutes) Required for music education majors, but open to others by departmental consent if space is available.

Mus. 1501-1504 Voice I-IV (½, ½, ½, ½)	Brown
Mus. 1511-1516 Piano I-VI (½, ½, ½, ½, ½, ½)	Lewis
Mus. 1551-1552 Strings I and II (½, ½)	Hoyle, Huber
Mus. 1560 Woodwinds (½)	Zimmer
Mus. 1570 Brass (½)	Volpe
Mus. 1590 Percussion (½)	Volpe

Private Studio Lessons

One private 50 minute lesson, per week, each semester, required of and reserved for music majors. May be repeated for credit.

Mus. 3600 Voice (1)	Brown, Cullen
Mus. 3610 Piano (1)	Engelhard, Feldman, Golub
Mus. 3620 Organ (1)	Gerrish
Mus. 3630 Harp (1)	
Mus. 3640 Guitar (1)	
Mus. 3650 Violin (1)	Huber
Mus. 3651 Viola (1)	Huber
Mus. 3652 Cello (1)	Hoyle
Mus. 3653 Double Bass (1)	
Mus. 3660 Flute (1)	
Mus. 3661 Oboe (1)	Grace
Mus. 3662 Clarinet (1)	
Mus. 3663 Saxophone (1)	Zimmer
Mus. 3664 Bassoon (1)	Zimmer
Mus. 3670 Trumpet or Cornet (1)	
Mus. 3671 French Horn (1)	Volpe
Mus. 3672 Trombone or Euphonium — Baritone Horn (1)	W. Price
Mus. 3673 Tuba (1)	Herron
Mus. 3690 Percussion (1)	Herron

Performance and Repertory

Mus. 2701-2702 Score Reading I and II (1,1) Huber
Reading of all clefs and transposing instruments, written and sight transportation at keyboard, condensed score reduction, playing from the open scores, progressing from simpler and shorter to full orchestral passages.
Prerequisite: Demonstrated keyboard proficiency.

Mus. 2710 Accompanying (½) Engelhard
Study and practice of piano accompanying, including sight-reading and transposition, for vocal and instrumental works. Two semesters required for Piano Majors.
Prerequisite: Demonstrated piano proficiency.

Mus. 3700 Voice Repertory (½) Brown, Cullen
Study and performance of representative cross-section in the solo voice repertory.
Corequisite: Private or class voice. May be repeated for credit.

Mus. 3710 Piano Repertory (½) Staff
Study and performance of representative cross-section of the piano repertory. May be repeated for credit.
Corequisite: Private piano lessons.

Mus. 3750 Chamber Music (½) Staff
Study and performance of representative cross-section of chamber music works. May be repeated for credit.
Prerequisite: Music major curriculum or demonstrated performance proficiency.

Ensembles

Study, rehearsal and performance of representative works in various styles and from different periods. May be repeated for credit.
Large ensembles (Mus. 3800 series) open to all students.
Prerequisite: Audition or consent of conductor.

Mus. 2810 Chorale (½)	
Mus. 2820 Women's Chorus (½)	Montgomery
Mus. 2830 Men's Chorus (½)	Cullen
Mus. 2840 Opera Class (½)	Brown
Mus. 2850 String Orchestra (½)	Huber
Mus. 2860 Woodwind Choir (½)	Zimmer
Mus. 2870 Brass Choir (½)	Herron
Mus. 2880 Jazz Workshop (½)	Volpe
Mus. 2890 Percussion Ensemble (½)	P. Price
Mus. 3800 Concert Chorus (½)	Cullen
Mus. 3840 Festival Chorus (½)	Platt
Mus. 3850 Orchestra (½)	Huber
Mus. 3860 Concert Band (½)	Herron

Independent Study

Mus. 4901, 4902, 4903 Independent Study in Music (1, 2, 3) Staff
The opportunity for students of advanced ability to pursue in a concentrated but informal manner a specific area of study in music not available through current course offerings.
Prerequisite: Approval of department chairman.

Faculty: Burt (Chairman), Catalano, Fethe,
Pashman, Pezzolo, Sitelman, Stern.

Introductory and Survey

Phil. 1040 Philosophy (3)

A general introduction to the ideas of great philosophers, major schools of thought, and basic issues. Among the topics considered are the meaning of philosophy, reality, knowledge, values and social philosophy.

The following variations of Phil. 1040 deal with the same general issues but stress specific areas or approaches in philosophy. Only one course may be taken at the 1000 level.

Phil. 1041 Justice, Freedom and the Good Society

Burt

Phil. 1042 Religion, Morals and Rational Thinking

Pashman

Phil. 1043 Moral Choice and Moral Issues

Fethe

Phil. 1044 Ideas of Great Philosophers

Sitelman

Phil. 1045 History of Philosophy

Staff

Phil. 1046 Freedom and the Individual

Catalano

Phil. 3010 Introduction to Analytic Philosophy (3)

Staff

The fundamental themes and methods of twentieth century British and American Analytical Philosophy. Among the philosophers to be covered will be Moore, Russell, Wittgenstein and Ayer.

Prerequisite: 3 semester hours in philosophy.

History

Phil. 3110 German Philosophers of the Nineteenth Century (3)

Pezzolo

A study of some of the great metaphysical systems produced by nineteenth century German philosophy. Among the philosophers to be considered will be Hegel, Marx, Nietzsche, Fichte and Schopenhauer.

Prerequisite: 3 semester hours in philosophy.

Value Theory

Phil. 2210 Social and Political Philosophy (3)

Burt, Pezzolo

The nature of the good society; the justification and criticism of social institutions as well as proposals for their reconstruction; a critique of the basic moral assumptions underlying various political doctrines and an analysis of concepts like law, natural law, rights, political obligation, equality, liberty and the common good.

Prerequisite: 3 semester hours in philosophy or permission of instructor.

Phil. 2220 Readings in Ethics (3)

Staff

A study of representatives of major efforts to establish a rational basis for ethical standards and the relevance of their ideas to contemporary controversy concerning traditional moral values.

Prerequisite: 3 semester hours in philosophy or permission of instructor.

Phil. 2240 Aesthetics (3)

Sitelman

A critical analysis of the meaning of aesthetic terms, the aesthetic experience, the structure of the aesthetic object, the nature of creative activity, and the nature of aesthetic judgment and its possibility of verification.

Prerequisite: 3 semester hours in philosophy or permission of instructor.

Phil. 2250 Philosophy of Peace (3)

Burt

Philosophical analysis of ideological conflicts, causes of war, world community, the morality of war, alternatives to violence, the concept of justice.

Prerequisite: 3 semester hours in philosophy or permission of instructor.

Phil. 3210 Contemporary Ethical Theory (3)

Stern

Analysis of significant problems in ethical theory: the nature of the good; the moral ought; naturalistic fallacy; metaethics and the meaning of ethical terms.

Prerequisite: 3 semester hours in philosophy.

Phil. 3220 Philosophy of Man (3)

A study of some of the modern and classical philosophical approaches to the nature of man: perception and intellection, free will and determinism; soul and mechanism; mind and body. An investigation into some of the philosophical foundations of modern theories of psychology.

Prerequisite: 3 semester hours in philosophy.

Theory of Knowledge

Phil. 2310 Language and Logic (3)

Fethe

Definition and fallacies; the elements of classical and modern logic; scientific theory and induction.

Phil. 2320 The Challenge of Technology: Philosophically Considered (3)

Pezzolo

A chapter in the history of philosophy which is only now being written: Is technology compatible with human autonomy and spontaneity? Is the control of nature possible without the death of the natural? Is technological progress, human progress?

Prerequisite: 3 semester hours in philosophy or permission of instructor.

Phil. 3310 The Philosophy of History (3)

Fethe

The philosophical problems raised by the study of history; the meaning and pattern of history; freedom vs. determinism and the nature of historical generalizations.

Prerequisite: 3 semester hours in philosophy.

Theory of Reality

Phil. 2410 Philosophy of Religion (3)

Fethe

The philosophical basis of the major Western religions. Attention is given to traditional proofs of God's existence, the problem of evil, the relation between science and religion, and the significance of contemporary Death-of-God theology.

Prerequisite: 3 semester hours in philosophy or permission of instructor.

Phil. 2430 Existentialism (3)

Catalano

The nature and modes of human consciousness, the meaning of embodied existence and being-in-the-world, the problem of freedom and value. Selected readings from the philosophies of Nietzsche, Kierkegaard, Husserl, Jaspers, Heidegger, Sartre, Camus and Merleau-Ponty.

Prerequisite: 3 semester hours in philosophy or permission of instructor.

Seminar and Independent Study

Phil. 4510 Contemporary Schools of Philosophy (3)

Staff

Major philosophic clashes of our time: the uses of language; the sources, limits, and test of knowledge; and the nature of the universe, man, morality, and the good society. Modern and traditional approaches including idealism, existentialism, neoscholasticism, pragmatism, logical empiricism and realism.

Prerequisite: 3 semester hours in philosophy.

Faculty: Israel, Kahn, Kelly, Ross, Rubin, Shenis, Talbot (Chairman), Weiss

Major in Political Science

	semester hours
GENERAL EDUCATION REQUIREMENTS (see page 27)	36
Recommended Cognate Courses <i>Within Social and Behavioral Sciences and History Cluster:</i>	
Two courses in United States history	6
MAJOR REQUIREMENTS	30
Required Courses	12
Pol. Sci. 1010 Introduction to Political Science I: Elements of Politics	3
Pol. Sci. 1020 Introduction to Political Science II: Political Institutions	3
Pol. Sci. 2100 American Government and Politics	3
One course from Political Theory area	3
Major Electives	18
At least 15 hours in 3000 and 4000 level courses	
ELECTIVES (see page 28)	58

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Collateral Program in Secondary Education Political Science majors who wish to teach must complete the Collateral Program in Secondary Education and elect with departmental advisement appropriate courses in several social sciences.

Major in Political Science Public Administration Option

	semester hours
GENERAL EDUCATION REQUIREMENTS (see page 27)	36
Required Cognate Courses	12
<i>Within the Sciences and Mathematics Cluster:</i>	
Math. 1931 Computer Arithmetic Algorithms	3
<i>Within the Social and Behavioral Sciences and History Cluster:</i>	
Mgt. Sci. 2120 Business Statistics	3
Pol. Sci. 1010 Introduction to Political Science I	3
Pol. Sci. 2100 American Government and Politics	3
MAJOR REQUIREMENTS	30
Required Courses	12
Pub. Adm. 1000 Public Administration	3
Pub. Adm. 3150 American Federalism: Intergovernmental Relations	3
Pub. Adm. 3210 Contemporary Organization	3
Pub. Adm. 3530 Public Personnel Administration	3
Major Electives selected with departmental advisement	18

ELECTIVES (see page 28)

58

Departmental advisement will be available in choosing the electives. It is recommended that an appropriate number of these electives be used to develop a second major in Political Science, Management Science or Computer Science

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Minor in Public Administration

	semester hours
Required Courses	12
Mgt. Sci. 2120 Business Statistics	3
Pol. Sci. 1010 Introduction to Political Science I	3
Pub. Adm. 1000 Introduction to Public Administration	3
Pub. Adm. 3150 American Federalism- Intergovernmental Relations	3

Electives

6

Two additional courses from the Public Administration area. With the written permission of the chairman, an upper division (3000-4000) Political Science course may be substituted for one of the Public Administration courses.

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Political Science—Introductory

- Pol. Sci. 1010 Introduction to Political Science I: Elements of Politics (3)** Staff
The concepts, terminology, problems and analytical approaches of the field of political science.
- Pol. Sci. 1020 Introduction to Political Science II: Political Institutions (3)** Staff
The study of prevailing political institutions in the world today, their dynamics as they relate to the governing process.

American

- Pol. Sci. 2100 American Government and Politics (3)** Kahn, Rubin, Shenis
The basic political principles and patterns in the American tradition. A conceptual framework provides the base for examining the role of government, constitutionalism, federalism, civil rights, political processes and the changing relationships between the "levels" and "branches" of government.
- Pol. Sci. 2110 American State and Local Political Systems (3)** Rubin, Weiss
A systems analysis applied to American state and local politics, including the socio-economic setting and the responsiveness of American state and local political systems to current issues.
- Pol. Sci. 2130 American Political Issues (3)** Kahn, Ross
Issues of the day are studied in both their historical and institutional setting.
- Pol. Sci. 2135 Political Participation (3)** Israel, Kahn
Fundamental questions of "citizen politics" with the main emphasis on the nature and function of political participation in the American political process.
Prerequisites: Pol. Sci. 1010, 1020 and 2100 or permission of instructor.
- Pol. Sci. 3100 The Legislative Process (3)** Ruben
An analysis of the formal and informal institutions and processes of the United States Congress.
Prerequisites: Pol. Sci. 1010, 1020 and 2100 or permission of instructor.
- Pol. Sci. 3120 Political Parties (3)** Israel
The study of the behavior of American parties and interest groups and a comparison of their actions with theories of democracy.
Prerequisite: Pol. Sci. 1010-1020, or permission of instructor.
- Pol. Sci. 3130 The American Judicial Process (3)** Israel
The politics of the American judicial system, how cases come before the courts and their impact upon the political system.
Prerequisites: Pol. Sci. 1010, 1020 and 2100 or permission of instructor.
- Pol. Sci. 3140 The American Presidency (3)** Kahn
In depth study of the presidency in terms of its institutional and behavioral aspects, with special emphasis on the exercise of the powers of the presidency.
Prerequisites: Pol. Sci. 1010, 1020 and 2100 or permission of instructor.
- Pol. Sci. 3150 American Constitutional Law I (3)** Ruben
Development of American constitutional law, both doctrinal and behavioral. Analysis of the position of the Supreme Court in the American system.
Prerequisites: Pol. Sci. 1010 and 1020 or permission of instructor.
- Pol. Sci. 3151 American Constitutional Law II (3)**
Continuation of Pol. Sci. 3150 which is prerequisite.
- Pol. Sci. 4100 Seminar in American Government and Politics (3)** Kahn
Open to advanced political science majors. Concentration on in-depth analyses of particular aspects of American political institutions and processes.
Prerequisites: Pol. Sci. 1010, 1020, 2100 and permission of instructor.

Theory

- Pol. Sci. 3200 Classical Political Theory (3)** Shenis
A study of classical European political thought from pre-Platonic times to the dawn of the modern age.
Prerequisite: Six hours of political science or permission of instructor.
- Pol. Sci. 3210 Modern Political Theory (3)** Shenis
The major currents of nineteenth and twentieth century political thought. Modern political and social theory considered and analyzed in terms of their contemporary relevance and influence.
Prerequisite: Six hours of political science or permission of instructor.
- Pol. Sci. 3250 American Political Theory (3)** Ross
The central doctrinal developments in American political theory, from pre-revolutionary beginnings to various contemporary positions. Important ideological positions, both orthodox and critical. The influence of theory on practice.
Prerequisites: Pol. Sci. 1010 and 1020.

Comparative

- Pol. Sci. 3300 Comparative Government (3)** Ross
The comparative study of political institutions in such countries as the USSR, Great Britain, France and West Germany.
Prerequisite: Six hours of political science or permission of instructor.
- Pol. Sci. 3310 Comparative Non-Western Government (3)** Ross
A comparative analysis of the governments and policies of the non-western nations with emphasis upon the study of change and stability in their political ideology and institutions; the process of political development and the problems of political leadership.
Prerequisite: Six hours of political science or permission of instructor.

International

- Pol. Sci. 3400 International Politics (3)** Kelly, Shenis
The state system and the balance of power, war in the pattern of international relations, suggest its subject matter.
Prerequisite: Six hours of political science or permission of instructor.
- Pol. Sci. 3410 International Organization (3)** Kelly
A study of the creation and existence of those institutions designed to resolve international conflicts and promote international cooperation, with special emphasis upon the United Nations.
Prerequisite: Pol. Sci. 1010 and 1020.
- Pol. Sci. 3450 Conduct of United States Foreign Policy (3)** Kahn
A study of political and administrative institutions and processes involved in a foreign policy making. The development of foreign policy. How political and administrative organizations respond to change. The substance of modern foreign policy questions.
Prerequisites: Pol. Sci. 1010 and 1020 or permission of instructor.

Behavior

Pol. Sci. 3500 Political Behavior (3)

Israel

The empirical study of American politics, with emphasis on public opinion and support building through the mass media. Student research will be expected.

Prerequisite: Pol. Sci. 3120 or permission of instructor.

Urban

Pol. Sci. 3700 The Urban Political System: Politics and Problems (3)

Rubin

The analysis of the urban political system and its relations to other community systems, with emphasis on function and dysfunction.

Prerequisite: Pol. Sci. 2100.

Public Administration Introductory

Pub. Adm. 1000 (Pol. Sci. 3600) Introduction to Public Administration (3)

Talbot

An introduction to the processes of administration with emphasis upon policy making in the national and state political systems and roles of groups and their impact upon administrative decision-making.

Prerequisite: Six hours of political science or permission of instructor.

Government Administration and Organization

Pub. Adm. 3150 American Federalism: Intergovernmental Relations (3)

Talbot

An analysis of the constitutional and institutional relationships among federal, state and local governments. Grants-in-aid, interstate compacts and intergovernmental cooperation in health, welfare and education.

Prerequisite: Pub. Adm. 1000 or Pol. Sci. 1020 or 2100.

Theory

Pub. Adm. 3210 Contemporary Public Organizations (3)

Talbot

Theoretical and scientific bases of public administration, including research methods.

Administrative Processes

Pub. Adm. 3530 Public Personnel Administration (3)

Staff

Survey of the processes of recruiting and managing personnel in public services. Philosophy of the merit system, evolution of the career system, techniques of recruitment, comparative modern structures and the position classification system.

Prerequisite: Pub. Adm. 1000 or permission of the instructor.

Regional

Pub. Adm. 3610 The Administration of Metropolitan Areas (3)

Talbot

Administration of governmental services in metropolitan regions. The governmental organizations and procedures involved in responding to the needs of a rapidly changing urban environment. The roles of different jurisdictions which may overlap or compete for fiscal resources.

Prerequisites: Pol. Sci. 1010, 1020 and 2100 or permission of instructor.

Pub. Adm. 4600 Local Government and Regional Administration (3)

Talbot

A survey of the role of local governments in regional administration with emphasis upon special districts, authorities and interstate compacts. The role of the county in regional planning by the case study method.

Prerequisite: Pub. Adm. 1000 or 3920 or permission of instructor.

Law and Law Enforcement

Pub. Adm. 4700 Administrative Law (3)

Staff

Delegation of powers, separation of powers, rule-making by administrative agencies. Study of cases which affect the administrative process and relate to the scope of judicial review.

Prerequisites: Pub. Adm. 1000 and 3650 or permission of instructor.

Urban

Pub. Adm. 3910 Urban Poverty (3)

Staff

The nature of poverty in the United States. The causes and consequences of urban poverty. Survey of existing anti-poverty programs in terms of content, administration and control.

Prerequisite: Pub. Adm. 1000 or permission of instructor.

Faculty: Angers, Baker, Bruel, DiSalvi, Feigenbaum, Fraunfelker, Golden, M. Harris, N. Harris, Kahn, Kamell, Kaplowitz, Kind, Lorber, Mercer, Morelli, Morgan, Peckham, Perez, Pomeroy, R. Roth, Samenfeld, Saperstein, Schwartz, Scire, Shepardson, F. Stern, D. Strauss, Youtz (Chairman), Zito

Major in Psychology

semester hours

GENERAL EDUCATION REQUIREMENTS (see page 27) 36

Required Course 3

within the Social and Behavioral Sciences and History cluster:

Psy. 1000 General Psychology or equivalent

Recommended Cognate Courses

Math. 1052 College Algebra and Trigonometry or

Math. 1053 Analytic Geometry

One course in Biology, Chemistry or Physics

Two of the following:

Soc. 1000 Principles of Sociology

Soc. 1800, Cultural Anthropology

Soc. 2300 Racial and Cultural Minorities

Soc. 2705 Juvenile Delinquency

MAJOR REQUIREMENTS

30

Required Courses

16/18

Psy. 3200 Psychological Statistics or 3

Psy. 3201 Psychological Statistics Survey 1

Psy. 3310 Theories of Learning 3

Psy. 3320 Theories of Personality 3

Psy. 4200 Tests and Measurements 3

Psy. 4230 Experimental Psychology 4

Psy. 4940 Seminar: Problems in Contemporary Psychology 2

Major Electives four courses, two recommended 14/12

on the 4000 level:

Psy. 2100 Child Psychology

Psy. 2110 Psychology of Adolescence

Psy. 3360 Theories of Motivation

Psy. 3540 Abnormal Psychology

Psy. 3630 Social Psychology

Psy. 4310 Systems of Psychology

Psy. 4360 Physiological Psychology

Psy. 4380 Psychology of Perception

Psy. 4390 Cognitive Processes

Psy. 4400 Principles of Behavior Analysis

Psy. 4420 Industrial Psychology

Psy. 4520 Psychodynamics of Individual and

Group Behavior

Psy. 4900 Field Work in Behavior Analysis

ELECTIVES (see page 28)

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Minor in Psychology

Students may select one of two emphases for their Psychology Minor. The General Minor is designed for those students who do not intend to major in psychology in graduate school. The Professional Minor is designed for those students who do intend to major in psychology in graduate school. The difference between these two programs is in the group of required courses for the Minor. As prerequisite to the program, Psy. 1000 General Psychology or its equivalent, should be taken.

	semester hours
Required Courses	12
GENERAL MINOR	
Psy. 2100 Child Psychology or Psy. 2100 Psychology of Adolescence	3
Psy. 3310 Theories of Learning	3
Psy. 3320 Theories of Personality	3
Psy. 4200 Tests and Measurements or Psy. 4380 Psychology of Perception or Psy. 4390 Cognitive Processes	3
PROFESSIONAL MINOR	
Psy. 3200 Psychological Statistics	3
Psy. 3310 Theories of Learning	3
Psy. 3320 Theories of Personality	3
Psy. 4230 Experimental Psychology	3
<hr/>	
Electives <i>two courses selected from the following:</i>	6
Psy. 2100 Child Psychology	
Psy. 2100 Psychology of Adolescence	
Psy. 3200 Psychological Statistics	
Psy. 3360 Theories of Motivation	
Psy. 3540 Abnormal Psychology	
Psy. 3630 Social Psychology	
Psy. 4200 Tests and Measurements	
Psy. 4230 Experimental Psychology	
Psy. 4310 History and Systems of Psychology	
Psy. 4360 Physiological Psychology	
Psy. 4380 Psychology of Perception	
Psy. 4390 Cognitive Processes	
Psy. 4400 Principles of Behavior Analysis	
Psy. 4420 Industrial Psychology	

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General

Psy. 1000 General Psychology (3)

Staff

An introduction to the study of human behavior and a foundation for later specialization in psychology. Perception and sensation, cognition, learning, motivation, intelligence, and personality.

Psy. 1004 General Psychology: The Experimental Approach I (3)

Introduction to the study of human behavior with special emphasis on cognition, sensation, perception, motivation, emotion, class and individual projects.

Psy. 1005 General Psychology: The Experimental Approach II (3)

Continuation of 1004. Topics include intelligence, personality, adjustment, psychopathology, therapy and social behavior.

Developmental

Psy. 2100 Child Psychology (3)

Staff

The physical, intellectual, emotional, and social aspects of childhood, including individual differences, the behavior characteristics of various age levels, and the types and methods of adjustment.

Prerequisite: Psy. 1000.

Psy. 2110 Psychology of Adolescence (3)

DiSalvi, Kamell, Saperstein

An examination of the nature of adolescence, as characterized by the group of developmental problems (biological, psychological, and social in origin), typically occurring during the second decade of life.

Prerequisite: Psy. 1000.

Psy. 2120 Home and Family Life (3)

Bruel, Kahn

The family, in terms of its psychological expectations and roles, its unities and disunities. The criteria and determinants of marital success and adjustment are evaluated, with emphasis on the psychodynamics of family interaction and its relationship to individual behavior.

Experimental and Measurement

Psy. 3200 Psychological Statistics (3)

Fraunfelker, M. Harris, Schwartz

An introduction to the statistical procedures by which small and large groups of data are treated, described, and analyzed, including interpretations and assumptions of correlation, probability and hypothesis testing, and chi square.

Prerequisite: Psy. 1000.

Psy. 3201 Psychological Statistics Survey (1)

Fraunfelker, S. Schwartz

Brief statistical survey covering topics in psychological statistics.

Prerequisites: Math. 1016 or equivalent and Psy. 1000.

Psy. 4200 Tests and Measurements (3)

Bruel, Fraunfelker, Mercer

An introduction to concepts of psychological testing and a survey of various instruments used in psychology to measure intelligence, aptitudes, achievement, attitudes and personality.

Prerequisites: Psy. 1000.

Psy. 4230 Experimental Psychology (4)

Staff

The systematic means used to discover and evaluate the significant relationships between the organism, its environment, and its psychological processes. Procedures are used involving the control of conditions affecting psychological phenomena.

Prerequisites: Psy. 1000 and Psy. 3200.

Specialized Areas: Theoretical and Experimental

Psy. 3310 Theories of Learning (3)

Major theorists: Thorndike, Guthrie, Pavlov, Hull, Skinner, Lewin, Tolman are studied. Developments in stimulus sampling theory, mathematical models, physiological approaches, cognitive models and current applications are considered.

Psy. 3320 Theories of Personality (3)

N. Harris, Kahn

The major systematized conceptualizations of personality: psychoanalytic and neopsychoanalytic theories, personologies, typologies, trait theories, field theories, learning-based theories, factor theories, and phenomenological theories.

Prerequisite: Psy. 1000.

Psy. 3360 Theories of Motivation (3)

Morelli

Motivation studied through systematic theory and current research. Topics include physiological regulatory systems, ethology, drives, arousal, hedonism, reinforcement, need-systems and motivation as related to personality theory.

Prerequisite: Psy. 1000.

Psy. 4310 Systems of Psychology (3)

Fraunfelker, Morelli

A critical survey of the history of psychology from its origins in Greek philosophy to its classical and modern systematic conceptualizations, including the philosophical, physiological and methodological origins of modern psychology, structuralism, associationism, functionalism, behaviorism, Gestalt psychology, and psychoanalysis.

Prerequisites: Psy. 1000.

Psy. 4350 Phenomenological and Existential Psychology (3)

Roth

Phenomenological and existential psychology as a contemporary "school" of psychological theory and research. Topics included are: the psychological modalities of human existence, human existence as the body-subject, human existence and anxiety, and human existence and intersubjectivity.

Prerequisites: Psy. 1000 and 3320.

Psy. 4360 Physiological Psychology (3)

M. Harris, Schwartz

The interactions and relationships between the nervous system, other body processes, and behavior: fundamentals of neuronal activity; the nervous system; traditional topics such as motivation, cerebral functions, organic psychopathology; current areas of research such as the activity of the single neuron, the reticular activating system, sleep and drug effects.

Prerequisite: Psy. 1000. Bio. 2402 recommended.

Psy. 4380 Psychology of Perception (3)

Schwartz

A review of theories of perception and a study of the environmental variables and underlying physiological processes which determine the selective human interaction with environmental events.

Prerequisites: Psy. 1000.

Psy. 4390 Cognitive Processes (3)

Baker, Morelli

An investigation of the function, structures, and process of cognition. Theories and research findings concerning cognition and related topics: learning, problem solving, concept formation, behavioral and experiential aspects of thinking, psycholinguistics, memory, creativity, emotions, and fantasy.

Prerequisite: Psy. 1000. Recommended: Psy. 3310.

Specialized Applied

Psy. 4400 Principles of Behavioral Analysis (3)

Golden

The analysis of behavior directed toward the explicit prediction and control of the behavior of humans. The detailed account of the terms, concepts, methodology and research findings of a scientific analysis of behavior according to the theory and principles of operant conditioning.

Prerequisite: Psy. 3310.

Psy. 4420 Industrial Psychology (3)

Staff

Principles of psychology applied to industrial problems and organization. Selected topics in personnel selection and training, engineering psychology, and organizational management.

Prerequisite: Psy. 1000, Psy. 4200 or permission of instructor.

Personality Dynamics

Psy. 3540 Abnormal Psychology (3)

DiSavli, N. Harris, Samenfeld

Deviant and disordered behavior and experience, its overt manifestations and its underlying psychological, biological, and social meaning.

Prerequisite: Psy. 1000.

Psy. 4520 Psychodynamics of Individual and Group Behavior (3)

N. Harris, Kahn

The psychodynamic influences on individual and group behavior, as explicated in major works of psychoanalytic psychology.

Prerequisite: Psy. 1000.

Social Psychology and Group Processes

Psy. 3630 Social Psychology (3)

Bruel, DiSalvi, Kaplowitz

The social influence on individual behavior and experience. How the thoughts, feelings, actions of individuals are influenced by the presence of other persons and by the complex social stimuli which surround them.

Prerequisite: Psy. 1000.

Psy. 3650 Understanding Self and Others (3)

Feigenbaum, Saperstein, Stern

The implications of psychological theories and research for individual development and adjustment.

Prerequisite: Psy. 1000.

Seminars, Practical and Individualized Study

Psy. 4940 Seminar: Problems in Contemporary Psychology (2)

Baker, Fraunfelker, Schwartz

Limited to psychology majors in their senior term. A synthesis of students' previous course work in psychology, with a consideration of significant current developments in theory, research, and practice.

Psy. 4970 Independent Study in Psychology (3)

Staff

Psychology majors in their senior year are given the opportunity to develop independent projects on appropriate topics under the guidance and supervision of member of the department. Meeting hours arranged by the student and the adviser will consist of the equivalent of at least thirty fifty-minute periods. The student is responsible for the plan of work, its development, and a final presentation in conformity with standards set by the adviser.

Sociology Faculty: Croce, Herrington, Hutchinson, Levin, Levine, Mayo, Ohr, Walker, Wendell (Chairman), Yellin, Zulumian
 Social Work Faculty: Graves, Herina, Metrey (Coordinator)

Major in Sociology

The Sociology Major provides the necessary background for graduate work in sociology, social work, city planning and related graduate institutes of urban affairs. It equips students for junior grade civil service positions in the fields of public welfare, the census bureau, labor departments and social security administrations on local, state and federal levels and for positions in public opinion and market research. Further, the major offers a basic training useful in teaching the social sciences on a secondary school level.

semester hours

GENERAL EDUCATION REQUIREMENTS (see page 27) 36

Required Cognate Courses 6

Six hours of intermediate level foreign language. (May be waived by record of proficiency in CEEB examination or equivalent as approved by the Department of Foreign Languages.)

MAJOR REQUIREMENTS 30

Required Courses 12

Soc. 1000 Principles of Sociology 3
 Soc. 2050 Social Statistics 3
 Soc. 2052 Methods of Social Research 3
 Soc. 3050 Development of Sociological Theory 3

Major Electives six courses, two at 3000 level, four at 4000 level 18

ELECTIVES (see page 28) 58

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Minor in Sociology

Six courses (18 hrs.) in sociology: two courses on the 2000 level; two on the 3000 level; one course on the 4000 level.

Collateral Program in Secondary Education Sociology majors who wish to teach social studies must complete the Collateral Program in Secondary Education and elect, with departmental advisement, appropriate courses in several social sciences.

Major in Social Work

The Major in Social Work prepares students for graduate professional social work education and for immediate employment in social work positions which do not require graduate social work education.

semester hours

GENERAL EDUCATION REQUIREMENTS (see page 27) 36

Required Cognate Courses 12

Within the Social and Behavioral Sciences and History cluster:

Econ. 1020 Principles of Economics 3
 Pol. Sci. 1010 Introduction to Political Science 3
 Psy. 1000 General Psychology 3
 Soc. 1000 Principles of Sociology 3

ADDITIONAL COGNATE COURSES 6

Math. 1016 Descriptive Statistics 3
 Psy. 2100 Child Psychology 3

MAJOR REQUIREMENTS 30

Required Courses 24

S.W. 2900 Introduction to Social Work 3
 S.W. 3900 Contemporary Social Policy and Services 3
 S.W. 3950 Methods of Social Work I 3
 S.W. 3951 Methods of Social Work II 3
 S.W. 4900 Field Experience Seminar in Social Work 6
 S.W. 4901 Advanced Field Experience Seminar in Field Work 6

Major Electives two additional social work courses selected with the guidance of the advisor 6

ELECTIVES (see page 28) 52

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General and Conceptual

Soc. 1000 Principles of Sociology (3)

Staff

An analysis and application of the basic concepts and research methods of sociology. Culture, community, group behavior, institutions and society are treated.

Theory and Method

Soc. 2050 Social Statistics (3)

Herrington

An analysis of the measurement problems involved in the treatment of sociological data. An introduction to the statistical techniques most frequently used in sociological research.

Prerequisites: Math. 1052 or equivalent and Soc. 1000 or permission of department chairman.

Soc. 2052 (3050) Methods of Social Research (3)

Herrington

The collection, organization, analysis and reporting or problem-centered social data, including sampling, interview techniques, the construction of questionnaires and the conduct of surveys.

Prerequisite: Soc. 2050 or permission of department chairman.

Soc. 3050 Development of Sociological Theory (3)

Yellin

A critical survey of the major theoretical viewpoints in nineteenth and early twentieth century sociological thought.

Prerequisite: Soc. 2052 or permission of department chairman.

Soc. 4051 Contemporary Sociological Theory (3)

Herrington

An investigation of various theoretical frameworks utilized by sociologists in viewing societies, social institutions and social interaction. An analysis of the major work of a number of twentieth century theorists.

Prerequisite: Soc. 3050 or permission of department chairman.

Soc. 4053 (4052) Research Seminar (3)

Staff

An individualized integrative experience in operationalizing a sociological hypothesis. The seminar activity will be directed to a comprehensive treatment of research problems and solutions.

Prerequisite: Soc. 2052.

Institutions

Soc. 2100 Sociology of the Family (3)

Staff

Analysis of sociological factors in marriage and the family in modern society, with cross-cultural comparisons.

Prerequisite: Soc. 1000.

Soc. 2110 Sociology of Education (3)

Herrington, Hutchinson

Education as a social institution and an organizational complex. The relationship between educational objectives and cultural values, manifest and latent functions of education.

Prerequisites: Soc. 1000.

Soc. 3100 Sociology of Religion (3)

Yellin

A comparative and analytical treatment of religion as a social institution. The relation of religion to social family, government, economy and other structures. Religion considered as an agent of change and stability in society.

Prerequisite: Soc. 2052 or permission of department chairman.

Soc. 3150 Urban Sociology (3)

Hutchinson, Mayo, Wendell

Urban patterns of living and interaction systems analyzed by means of sociological concepts and methods. A field-study project affords each student an opportunity to observe an aspect of urbanism at close range.

Prerequisite: Soc. 2052 or permission of department chairman.

Soc. 3160 American Society (3)

Hutchinson

Systematic analysis of American Society in terms of its institutional and organizational subsystems: family, school, religion, government and economy. Attention centered on interrelations of subsystems and issues posed in socio-cultural change.

Prerequisite: Soc. 2052 or permission of department chairman.

Soc. 4110 Political Sociology (3)

Yellin

A review and analysis of theory and research on the nature and distribution of power in society. A study of the social variables and processes determining stability and change in the political institution.

Prerequisite: Soc. 2052 or permission of department chairman.

Formal Organizations

Soc. 3200 Sociology of Work (3)

Wendell

The world of work in modern industrial society examined and analyzed in terms of management theory, human relations and occupations.

Prerequisite: Soc. 2052 or permission of department chairman.

Soc. 4200 (2200) Complex Organizations (3)

Wendell

A survey of theory and research on complex or formal organizations. Major emphasis on the bureaucratic model, its modifications and special adaptations.

Prerequisite: Soc. 2052 or permission of department chairman.

Social Differentiation

Soc. 2300 Racial and Cultural Minorities (3)

Herrington, Levine

Relations among racial, ethnic and religious minorities and their positions relative to the dominant social, economic and political structure of American Society.

Prerequisite: Soc. 1000.

Soc. 2310 (2800) Sociology of Poverty (3)

Wendell

An analysis of the social forces and conditions which operate and maintain poverty in the social structure. Discussion of various viewpoints concerning the nature and reduction of poverty.

Prerequisite: Soc. 1000.

Soc. 3350 Social Stratification (3)

Wendell

An examination of the theories and research attempting to explain the unequal distribution of power, property and prestige in society. Particular emphasis on class and status groups in contemporary U.S. Society.

Prerequisite: Soc. 2052 or permission of department chairman.

Soc. 3360 Population (3)

Mayo

An investigation of the composition and distribution of the population in the United States and selected countries. An analysis of the determinants and consequences of change in the basic processes of fertility, mortality and migration.

Prerequisite: Soc. 2052 or permission of department chairman.

Soc. 4301 Sex and Society (3)

Yellin

A comparative study of the relationships between the roles of men and women and analysis of the social and cultural determinants of human sexual behavior. For senior sociology majors only.

Prerequisite: Soc. 2052 or permission of department chairman.

Social Dynamics

Soc. 3400 Collective Behavior (3)

Herrington

A review of concepts about human interaction in unstructured situations as in a panic, a craze, a riot. The role of rumor, propaganda and public opinion in such phenomena. Studies in depth of selected contemporary examples.

Prerequisite: Soc. 2052 or permission of department chairman.

Soc. 3410 Social Movements (3)

Herrington

An examination of sociological and social psychological theories of the original and career patterns of social movements. Study in depth of selected examples.

Prerequisite: Soc. 2052 or permission of department chairman.

Soc. 4401 Social Change (3)

Wendell

An investigation of various theoretical frameworks utilized by sociologists in viewing social change. An analysis of numerous case studies of change in modern societies.

Prerequisite: Soc. 2052 or permission of department chairman.

Deviation and Disorganization

Soc. 2705 Juvenile Delinquency (3)

Croce

A sociological analysis of juvenile delinquency: definition, examination of the existing laws pertaining to delinquents, extent of the problem, survey of economic and social costs, programs of rehabilitation, treatment and/or prevention.

Prerequisite: Soc. 1000.

Soc. 2710 Criminology (3)

Croce

An analysis of crime within a sociological framework: the cultural setting, theories of cause, penology and programs for treatment and prevention.

Prerequisite: Soc. 100.

Anthropology

Soc. 1800 Cultural Anthropology (3)

Staff

The structures and functions of the culture systems of both simple and complex societies, employing the methods and concepts of anthropology.

Soc. 2810 Physical Anthropology (3)

Staff

A systematic examination of theories of human evolution; an investigation into genetic processes and the physiological basis for racial origins and variations. A consideration of natural and cultural selection, ethnology and eugenics.

Social Work

S.W. 2900 Introduction to Social Work (3)

Staff

An historical overview of the societal patterns of dealing with man's social problems, from ancient to modern times, as reflections of changing values, institutions, and philosophies.

Prerequisite: Soc. 1100 or permission of instructor.

S.W. 3900 Contemporary Social Policy and Services (3)

Graves, Metrey

Study of current social welfare programs in relation to the policies and provisions required to meet the various social needs of the people in this and other countries. Field observations of selected community helping programs.

Prerequisite: S.W. 2900.

S.W. 3901 Comparative Social Welfare (3)

Metrey

A study of social welfare programs outside the United States with particular emphasis on policies developed to meet recurring social welfare problems.

Prerequisite: S.W. 2900.

S.W. 3950 Methods of Social Work I (3)

Graves, Herina

Examination of the major methods of social intervention with individuals, groups, and communities, with focus on the values, ethics and skills of the social work profession. Case analysis and observation of helping techniques are utilized.

Prerequisite: S.W. 3900.

S.W. 3960 Social Work with Groups (3)

Graves

A specialized method course in deepening understanding of and to facilitate skills in working with groups to bring about planned change effort.

Prerequisite: S.W. 3951.

S.W. 3970 Social Work with Individuals (3)

Herina, Metrey

A specialized methods course deepening the understanding of skills in social work study, diagnosis and treatment. Emphasis on the individual adult and child as well as the family unit in order to engage the client(s) in the planned change effort.

Prerequisite: S.W. 3951.

S.W. 4900 Field Experience Seminar in Social Work (6)

Herina, Metrey

Supervised placement two days per week in a community welfare or social service setting, offering direct participation in the helping process. Concomitant two hour weekly seminar to integrate course knowledge with field experience.

Prerequisite: S.W. 3950.

S.W. 4901 Advanced Field Experience Seminar in Social Work (6)

Herina, Metrey

Continuation of field experience seminar on an advanced level. Supervised field experience in a community social agency offering increased opportunity for primary direct services to clients.

Prerequisite: S.W. 4900.

Faculty: Barnhart, Berson, Bilowit, Cohen, Fanelli, Fisher, Frankel, Gasorek, Gaza, Gens, Haffly, Hart, Heller, Jonas (Chairman), Krapes, Larghi, J. G. Leonard, Roth, Schiavetti, Terr, Van Atta.

Major in Special Education Teacher of the Handicapped

This course of study prepares students for New Jersey certification as teachers of the handicapped in grades K-12.

	semester hours
GENERAL EDUCATION REQUIREMENTS (see page 27)	36
Required Cognate Courses	9
<i>Within the Humanities Cluster:</i>	
Eng. 1900 Speech	3
<i>Within the Social and Behavioral Sciences and History Cluster:</i>	
Psy. 1000 Gener. Psychology	3
Psy. 2100 Child Psychology	3
ADDITIONAL COGNATE COURSES	9
<i>Selected from Clusters I, II and/or III in General Education Requirements</i>	

MAJOR REQUIREMENTS

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C.S. 3400 The Teaching of Reading in the Elementary School	3
E.A.S. 3100 Elementary Curriculum and Methodology	3
E.A.S. 3110 English in the Elementary School	3
E.A.S. 3120 Mathematics in the Elementary School	3
E.A.S. 3130 Science in the Elementary School or	
E.A.S. 3133 Inquiry Centered Science Programs for 5 to 9 Year Old Children	3
E.P.S. 2000 Introduction to Education	3
One course in Foundations: E.P.S. 4010-4070	3
F.A. 3910 Art in Education	2
I.D. 4051 Art for the Exceptional Child or	
Sp. Ed. 4151 Introduction to Arts and Crafts for Mentally Retarded	3
Sp. Ed. 2051 Introduction to Education of the Handicapped	3
Sp. Ed. 2154 Introduction to Mental Retardation	3
Sp. Ed. 2052 Introduction to Psychology of the Handicapped	3
Sp. Ed. 3153 Introduction to Curriculum Building for Mentally Retarded	3
Sp. Ed. 3154 Introduction to Materials and Methods for Teaching Trainable and Educable Mentally Retarded	5
Sp. Ed. 3252 Teaching Language to the Deaf and Hard of Hearing	3
Sp. Ed. 4053 Orientation in Psychological Testing	3
Sp. Ed. 4134 Student Teaching	8

ELECTIVES (see page 28)

25

Major in Speech and Hearing

The major in speech and hearing is designed to prepare the student to meet state certification requirements to work with speech and hearing handicapped children in schools or to become a teacher of the deaf. It is also designed to provide basic training for other clinical opportunities by offering a broad base for further graduate work and thus qualify students for certification by the American Speech and Hearing Association (A.S.H.A.).

	semester hours
GENERAL EDUCATION REQUIREMENTS (see page 27)	36
Required Cognate Courses	16
<i>Within the Humanities Cluster:</i>	
Eng. 1900 Speech	3
<i>Within the Sciences and Mathematics Cluster:</i>	
Bio. 1000 Principles of Biology	4
Math. 1016 Descriptive Statistics	3
<i>Within the Social and Behavioral Sciences and History Cluster:</i>	
Psy. 1000 General Psychology	3
Psy. 2100 Child Psychology	3
ADDITIONAL COGNATE COURSES	9
<i>Selected from clusters I, II and/or III in General Education Requirements to include:</i>	
Bio. 2402 Principles of Human Anatomy and Physiology	4
MAJOR REQUIREMENTS	60
E.A.S. 3100 Elementary Curriculum and Methodology	3
One course in Foundation: E.P.S. 4010-4070	3
Ed. Psy. 3801 Education Psychology	3
Sp. Ed. 2051 Introduction to Education of the Handicapped	3
Sp. Ed. 4053 Orientation in Psychological Testing	3
All courses offered by the department in the area of Speech and Hearing except that Sp. Ed. 2052 Introduction to Psychology of the Handicapped may be substituted for Sp. Ed. 4259 Speech Pathology III.	45
ELECTIVES (see page 28)	23
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Students majoring in this program, who also desire elementary certification, should include the following courses in their program:

S.S.Ed. 4201 Social Studies in the Elementary School	3
F.A. 3910 Art in Education or	
Mus. 2310 Elementary School Music Education	2
Health Education Course	2
Rdg. Ed. 3101 Teaching Reading in the Elementary School	3
Sci. Ed. 3402 Science in the Elementary School	3
Math. Ed. 3301 Mathematics in the Elementary	3

General

Sp. Ed. 2051 Introduction to Education of the Handicapped (3) Staff
Early detection and proper care of all disabilities are considered in this course. Etiology, diagnosis and prognosis, different treatments and remedial procedures and their educational implications; basic educational procedures for the various disabilities. Visitations are made to observe programs for the mentally and physically handicapped.

Sp. Ed. 2052 Introduction to Psychology of the Handicapped (3) Staff
The psychology of all types of disabilities, mental and physical. The degrees of retardation, their causes and the concomitant disorders of behavior. The emotional and social adjustment of the physically handicapped. The psychological basis for appropriate education and care of all types of handicaps.

Sp. Ed. 4053 Orientation in Psychological Testing (3) Staff
An overview of clinical tests. An introduction to the way tests are constructed and validated. Practice in the administration of a few tests under supervision to provide familiarity with the behavior of individuals, especially the mentally handicapped, in test situations.

Prerequisite: Sp. Ed. 2051.

Mental Retardation

Sp. Ed. 2154 Introduction to Mental Retardation (3) Staff
Emphasis placed on physical, emotional and social characteristics of the mentally retarded. Identification, diagnosis and treatment of the mentally retarded included. Each student expected to spend a minimum of 20 hours in observation and participation in a program for the mentally retarded.

Sp. Ed. 3153 Introduction to Curriculum Building for the Mentally Retarded (3) Staff
The philosophy and principles of curriculum development and analysis of various approaches.
Prerequisites: Sp. Ed. 2051, 2052 and 2154.

Sp. Ed. 3154 Introduction to Materials and Methods for Teaching Trainable and Educable Mentally Retarded (5) Staff
Emphasis on the construction of programs which will adequately correlate skill subjects with the core of interest, emphasizing subject-time allotments, and subject spacing in programs for educable and trainable mentally retarded children. The evaluation and use of all records and methods of teaching the mentally retarded child. There is a minimum 40 hour visitation requirement in special education programs.
Prerequisites: Sp. Ed. 2051, 2052 and 2154.

Sp. Ed. 4151 Introduction to Arts and Crafts for Mentally Retarded (3) Staff
Meaningful and interesting manual activities for sequential skill development. Projects are with wood, leather, plastics, metal, ceramics, basketry, cardboard and weaving.

Sp. Ed. 4134 Student Teaching (8) Staff
Experience in full time teaching in a public school under the guidance and direction of a cooperating teacher and a college supervisor.
Prerequisites: Sp. Ed. 3153 and 3154 and permission of department.

Speech and Hearing

Sp. Ed. 2251 Speech Correction (3)

Gens

An orientation course for all classroom teachers and the basic course for speech and hearing majors. It presents an introduction to the field of speech pathology with emphasis on the recognition and treatment of speech disorders in school children.

Sp. Ed. 2254 Phonetics (3)

Schiavetti

English sounds in connected speech, intonation, phonetic dictation, acoustical and anatomical relationships. Application is made to problems of language teaching and disorders of communication.

Sp. Ed. 2255 Psychology of Communication (3)

Van Atta

A study of the linguistic and psychological bases of the speech and hearing processes. The ontogenetic and phylogenetic development of speech as a communication tool. Implications for the study of speech in psychology, semantics, and thought.

Sp. Ed. 2260 Anatomy and Physiology of the Ear and Speech Mechanism (3)

Schiavetti

A study of the basic structures and functions of the auditory and speech mechanisms. Application of such study is made to the field of audiology and speech pathology.

Sp. Ed. 3252 Teaching Language to the Deaf and Hard of Hearing (3)

Van Atta

A review of auditory cognition and language development. Principles and methods of teaching language to persons having communication disorders and auditory deficits. This course meets requirements for certification in the area of teaching the deaf and hard of hearing, and is of particular value to teachers of the mentally retarded who have faulty language development.

Sp. Ed. 3256 Speech Pathology I (Disorders of Articulation and Voice) (3)

Van Atta

A study of the nature, etiologies, examination, diagnoses, and remedial techniques associated with disorders of articulations and voice. Case discussions and clinic observation.

Prerequisites: Sp. Ed. 2251, 2254 and 2260.

Sp. Ed. 3257 Speech Pathology II (Organic Disorders of Speech) (3)

Heller

A study of the nature, etiologies, and remedial techniques associated with aphasia, cerebral palsy, and cleft-palate. Case discussions and clinic observations.

Prerequisites: Sp. Ed. 2251, 2254 and 2260.

Sp. Ed. 3259 Introduction to Audiology (Audiometric Testing and Hearing Aids) (3)

Terr

An introduction to the theory and practice of pure tone and speech audiometry. Interpretations of audiograms for education, medical and industrial applications. Observation and limited clinical experience are made available for the student.

Prerequisite: Sp. Ed. 2260.

Sp. Ed. 3262 Aural Rehabilitation (Lip-Reading and Auditory Training) (3)

Terr

A review of auditory and visual perception. Development of skill in using amplification devices, lip-reading tests, and interpretations of audiometric findings. Practical experience in auditory training and lip-reading with individuals and groups of all age levels.

Prerequisite: Sp. Ed. 3252.

Sp. Ed. 3263 Methods of Teaching the Deaf and Hard of Hearing (3)

Staff

Development of classroom materials for the deaf or hard of hearing child. Modification of the curriculum for the deaf or hard of hearing. Utilization of aural rehabilitation procedures in teaching subject matter in the classroom. Lesson planning based on classroom needs of the hearing handicapped.

Prerequisite: Sp. Ed. 3262.

Sp. Ed. 4203 Student Teaching (8)

Staff

Experience in full time teaching in a public school under the guidance and direction of a cooperating teacher and a college supervisor.

Sp. Ed. 4257 Speech and Hearing Clinic I (2)

Gens

Supervised clinical experience with individuals with various types and degrees of speech and hearing impairments. Organization of speech and hearing programs in schools, hospitals, or clinics is developed in this course.

Prerequisite: Sp. Ed. 3526 or 3527.

Sp. Ed. 4258 Speech and Hearing Clinic II (2)

Gens

A continuation of Sp. Ed. 4257, which is prerequisite.

Sp. Ed. 4259 Speech Pathology III (Stuttering) (3)

Heller

Introduction to analysis of major theories on stuttering. Study of preventive principles, diagnostic and therapeutic procedures in the clinic and school.

Prerequisite: Sp. Ed. 4257.

Educational Psychology

Ed. Psy. 3801 Educational Psychology (3)

Staff

An analysis of learning theory and its application. Considers cognition, motivation, tests and measurements.

Corequisites: E.A.S. 3100, 3110, 3130, 3900, C.S. 3400 and Ed. Psy. 3801 must be taken concurrently by full-time elementary education majors.

Ed. Psy. 3802 Educational Psychology of the Disadvantaged Urban Child (3)

Hart

Nature and development of the learning process for the inner-city child; emphasis on current research in compensatory programs.

Prerequisite: Ed. Psy. 3801 or permission of instructor.

Ed. Psy. 4801 Group Dynamics-Principles and Applications (3)

Leonard

Principles of group function (types of groups, group structure, communication, leadership membership roles, etc.), means of observing and recording group information, and techniques of working with groups. Designed for students interested in group processes and group work in education, recreation and allied fields.

Ed. Psy. 4802 Research Methodology in Education (3)

Cohen

An introduction to the steps involved in educational research; the use of source materials; and a survey of basic statistical concepts.

Prerequisite: Junior or senior standing.

Student Personnel Services

S.P.S. 4900 Guidance (3)

Staff

The guidance program in the modern secondary school educational, vocational, and personal guidance. Guidance techniques employing personal inventory, occupational and educational information and counseling studied as ways to help secondary pupils solve their problems.

Junior Field Experiences

Junior Field Experiences are required within the elementary, early childhood, fine arts education, elementary teacher-librarian and physical education majors during the junior year. These experiences consist of extended visits to public schools where students are given the opportunity to observe classroom teachers and pupils and to become familiar with the administrative and organizational structure of schools. Registration with the Teaching Performance Center for this experience takes place in December of the sophomore year. The junior field experience is also available to secondary education majors.

Student Teaching

All education majors spend from eight weeks to a full semester in a public school, gaining experience in full-time teaching under the guidance and direction of a cooperating teacher and a college faculty supervisor. The assignment to a school is made by the Teaching Performance Center. A cumulative grade-point average of 2.0 and 90 hours of course credits are required for student teaching.

Undergraduate students register in December of the junior year.

Part-time students currently matriculated as undergraduates apply to their academic advisors for information about student teaching. Students holding non-teaching Bachelor's degrees contact the Certification Office.

A supervised teaching seminar is arranged to fulfill student teaching requirements for in-service teachers holding non-teaching bachelor's degrees.

Student teaching and field experience courses are listed in the appropriate major department section.

The Teaching Performance Center

All student teaching and junior field assignments are coordinated through the Teaching Performance Center. The Center functions as liaison between the College and public schools in placing students in classrooms for professional field experiences.

The Center also houses a video studio and coordinates the School of Education's microteaching and off-campus student teaching vid-analysis programs. Students and professionals are welcome to visit the Center which is located on the first floor of Willis Hall.



Admissions Fees and Financial Aid

Applicants are admitted to Newark State College on the basis of academic and personal qualifications. The recruitment and admissions procedures are designed to enroll the best qualified students for the College. Each applicant is considered carefully in the light of his secondary school record, both academic and personal, his performance on a scholastic aptitude test and the College's estimate of his potential as a student and as a college-educated member of society.

Freshman are generally enrolled for the fall semester with only a limited number admitted for the spring.

Special opportunities for admissions are made possible through the Exceptional Educational Opportunities Program, designed for students with limited academic preparation, and V.I.P. — Veterans Identity Program, which enables veterans to move into the College on one of a variety of part time and full time levels.

All procedures for application and admission are published in detail in a special bulletin which is available on request through the Office of Admissions. All prospective students are urged to contact the College as follows:

Director of Admissions
Newark State College
Union, New Jersey 07083
Tel. 201-527-2195

Exceptional Educational Opportunities Program Project "About Time"

Generated by concerned faculty at Newark State College in the winter of 1968, this program is supported mainly by the New Jersey Educational Opportunity Act of 1968. Academic and personal adjustments is the keynote. Students with limited academic preparation are given intensive supportive services.

Each E.E.O. student is required to attend a special summer session which is an introduction to the academic demands of college life. During this time students may choose to commute or live in a campus dorm. Reading and study skills are strengthened. Courses in developmental writing, mathematical concepts and science overview are featured. Students are pre-tested in mathematics, science and English to determine their placement in each of these areas. Then the program of assistance and reinforcement proceeds according to individual need. Results of pre-testing also indicate the student's readiness for courses which earn college credit.

After the student has moved into the fall academic semester supportive services in tutoring, counseling, advisement and financial aid continue and do so throughout the college years.

Transfer Admission

Applicants for transfer may seek admission to the fall or spring semester. A cumulative average of no less than 2.0 (C) along with 15 completed semester hours of transferable credit is required for consideration.

Admission is based on the quality of the candidate's previous college work and the availability of space. The approval of the department in which the student will major may also be required.

Foreign Students

Students who are not citizens of the United States and who do not reside in this country may apply for admission to Newark State College. Application procedures should be instituted with the Admissions Office at least six months prior to the date of expected entry. All foreign students applying as freshmen must submit results of the Scholastic Aptitude Test of the College Entrance Examination Board, a statement of complete financial support and certified translated copies of all academic credentials. The Test of English as a Foreign Language (T.O.E.F.L.) of the College Entrance Examination Board is required of those for whom English is not their native language.

Foreign nationals residing in the United States follow regular admissions procedures.

Admissions of Veterans

Veterans will be permitted to file applications after the deadline, provided the date of discharge occurred no longer than two months prior to the date of application. Ex-servicemen will be expected to meet all other admissions criteria. Applications must be received by the Admissions Office within 30 days before the beginning of the semester for which the candidate wishes to enroll.

Veterans eligible for Veterans Administration assistance are invited to investigate opportunities available through the Veterans Identity Program. VIP offers entrance to college at five levels tailored to individual needs. For information contact the Veterans Coordinator.

Tuition, fees and expenses are established by the New Jersey Board of Higher Education and are subject to change by the Board. Payment is made according to the following schedule with checks drawn to "Newark State College."

Tuition

Full-Time Student: New Jersey Resident	\$535.00
Payable in two installments of \$267.50 at the beginning of each semester. The College recognizes the student's residence to be that of his parent or legal guardian.	
Full-Time Student: Non-Resident	\$1070.00
Payable in two installments of \$535.00 at the beginning of each semester.	
Part-Time Student	\$20.00
Per semester hour	

Fees

Admissions	\$10.00
Required of each applicant. Non-refundable.	
Student Service	\$35.00
\$17.50 per semester. Covers health services, publications and other administrative services. For students newly admitted or re-entering Newark State, this serves as a non-refundable Matriculation Fee which guarantees placement and is payable as follows: Freshmen — by May 1; Transfers and students re-entering — within 16 days following receipt of admission or re-entrance notice.	
Student Activity	\$70.00
\$35.00 per semester. Finances the functions of the student organization.	
Registration	\$2.00
Required of all students each semester and non-refundable.	
Late Registration	\$5.00
Charged for registration and payment of fees later than the dates announced by the Registrar and Director of Business Services.	
Change of Program	\$5.00
Student Teaching	\$60.00
Charged in addition to tuition. The fee is non-refundable and is assessed near the end of the junior year when student teaching assignments are made.	
Supervised Teaching Seminar	\$60.00
Charged in addition to tuition.	
Teaching Certificate	\$20.00
Required of all candidates in each area of certification. It is due with remittance of Student Teaching Fee.	

Campus Parking: Full-Time Students

\$10.00

Covers the academic year. All student vehicles are to be registered with the Parking Office. Students living in residence halls are not permitted to have motor vehicles on campus. Residence hall students who are given student teaching assignments may secure a special permit from the Business Office for the months during which they are out on assignment, when authorized by the Director of Residence.

Campus Parking: Part-Time Student

\$4.00

Covers from the beginning of fall semester through intersession.

Campus Parking: Summer Session

\$4.00

Residence Hall

\$595.00

Room fee for Whiteman and Dougall Halls. May be paid in two installments of \$297.50 each at the beginning of each semester. A deposit of \$50.00 is required when a student is accepted for admission to the residence hall. This deposit represents a breakage fee for damages of both an individual and general nature as outlined in the dormitory contract. Any student withdrawing before entering the college forfeits his deposit. No refunds are made except as provided for in the contract signed by the student and parent.

Student Health Insurance

\$25.00

This is a current annual premium, included in the fall semester billing. The college's group insurance plan for medical reimbursement affords protection on a yearly basis from September 1 to August 31 from the full burden of expenses incurred because of illness or injury. Compensable items include hospital care, surgery and limited physicians' fees. Students may obtain insurance beginning with the spring semester on a pro-rated basis through the insurance company directly. Claims for benefits are handled through the college's Health Office.

Transcripts

\$1.00 each

Obtained through the office of the Registrar. There is no charge for the first transcript.

Books

Each student buys his own books, which may be secured from the college book store. Books and materials for the first year cost about \$100.00 except for industrial education majors, who purchase certain items which will be used throughout the four years for an additional cost of about \$300.00

Refund of Tuition

Students who withdraw from the College or who are granted a leave of absence may be granted a refund of tuition and certain other fees on the following basis:

Withdrawal before sessions begins	90%
Withdrawal during first third of session	50%
No refund thereafter	

College-Administered Programs

Newark State College endeavors to make assistance available to a student in accordance with his financial need. Such need is determined on an individual basis and is measured as the difference between college costs and the resources of a student and his parents. The Parents' Confidential Statement is normally required as part of the application. Application deadline for grants, National Direct Student Loans and summer Work-Study employment is May 1.

Students may secure applications and further information on all aid programs through the Financial Aid Office.

NATIONAL DIRECT STUDENT LOAN PROGRAM

Loans from the NDSL program are granted in amounts from \$100 to a maximum of \$2,500 for two years. Applicants must demonstrate financial need, must be matriculated, and must carry at least a half-time load (8 credits). Repayment of the loan on a quarterly basis begins nine months after graduation or withdrawal from college. Simple annual interest of 3 percent is charged after the nine months' grace period. A minimum payment of \$30 per month is required, over a repayment period that may extend to a maximum of ten years. Payments may be deferred while a borrower is in graduate school, military service, Peace Corps and Vista. A portion of the loan may be cancelled while a borrower serves as a combat veteran, teaches the handicapped, or teaches the disadvantaged in certain Title I or Headstart schools.

SUPPLEMENTAL EDUCATIONAL OPPORTUNITY GRANTS

Yearly grants from federal funds of \$200 to \$1,000 are awarded to students with exceptional financial need. Grants must be matched by equal amounts from certain other programs such as state scholarships, National Direct Student Loans, and Work-Study earnings.

EDUCATIONAL OPPORTUNITY FUND

Yearly grants from state funds of \$250 to \$1,000 are awarded to students enrolled in Newark State's Exceptional Educational Opportunity Program, to transfers who have had an EOF award from another college, and if funds permit, to a limited number of other students in the lower division of the college who meet the criteria. Recipients must have been New Jersey residents for at least one year and must demonstrate exceptional financial need.

MEMORIAL LOAN FUND

Emergency loans to meet short-term needs for college expenses are available to full-time students. Loans are repayable within the semester.

STUDENT EMPLOYMENT

The College Work-Study Program, maintained with federal funds, provides part-time and summer jobs both on campus and in off-campus agencies for matriculated students with demonstrated need.

The Student-Aide Program provides part-time and summer jobs for matriculated students. Factors in employment are required skills and interest in the job, not necessarily financial need.

Within the limitations of individual financial need and employment funding, students may work an average of 15 hours per week while classes are in session or up to 40 hours during vacations and holidays. Anyone desiring placement in the summer should complete an application before May 1. Freshmen admitted for September are eligible to work in the summer preceding their attendance.

Students who have filed job applications in the Financial Aid Office may also be referred to the Personnel Office for any jobs available on campus outside the Work-Study and Student-Aide Programs.

To assist students in finding part-time work outside the college the Financial Aid Office maintains a bulletin board on which are posted jobs reported by off-campus employers. Students apply directly for openings of interest to them.

HONOR SCHOLARSHIPS

There are a number of honor scholarships which the College awards each spring for use the following year. Financial need as well as other criteria is a factor in the awards. Applications, including a copy of the parents' tax return for the last taxable year, must be submitted to the Financial Aid Office no later than April 1. Upon recommendation of the Scholarship Committee, the following scholarships are awarded.

Alumni Scholarship — A scholarship of \$250 is given by the Alumni Association to a member of the junior class, chosen primarily on the basis of loyalty and devotion to the college as demonstrated by attitudes towards and participation in the extra-curricular activities. Additional criteria are leadership and academic performance.

Catherine A. Blewitt Memorial Scholarship — A scholarship of \$200 from the Newark Association of Directors and Supervisors is awarded to a junior in elementary or early childhood education, with preference given a Newark resident or a graduate of any Newark school. Criteria are rank in the upper third of the class, leadership and service.

Guy V. Bruce Scholarship — A scholarship is awarded to a student who has manifested dedication to the restoration and preservation of the environment.

B. Croce Educational Society Scholarship in honor of V. Libero Sibilia, Class of 1917 — This scholarship of \$100 is awarded to a freshman, sophomore, or junior man who has evidenced qualities of leadership and has maintained a satisfactory academic record.

Teresa F. Fitzpatrick Memorial Scholarship — A scholarship of \$150 is awarded by the Newark Branch of the Association for Childhood Education to a junior in elementary or early childhood education who has evidenced good scholarship and unusual interest in





service to others. The recipient must be a Newark resident or a graduate of Newark schools.

Isadore and Frieda Holtz Foundation Scholarship — A scholarship of \$300 is awarded to a sophomore or junior on the basis of good scholarship, promise and ability.

John F. Kennedy Memorial Scholarship — Scholarships are awarded by the Student Council to freshmen, sophomore or juniors on the basis of participation in college activities and a satisfactory academic record.

New Jersey Bell Telephone Scholarships — Two scholarships of \$300 each are awarded to New Jersey residents in the sophomore or junior classes on the basis of academic performance and ability.

Newark Public Schools Athletic Association Scholarship — A scholarship of \$200 from the Newark Public Schools Athletic Association is awarded to a freshman, sophomore, or junior majoring in physical education and with a satisfactory academic record. The recipient must be a graduate of a Newark public high school or a former Newark public high school student who finished with GED tests or military service studies.

Newark State College Staff Association Scholarship — A scholarship of \$100 is awarded on the basis of scholarship and promise and may be awarded to a highly qualified student for two or three consecutive years.

Presidential Trust Fund Scholarship — A scholarship of \$400.00 is awarded to a freshman, sophomore or junior on the basis of community service, significant participation in inter-collegiate athletics and good academic standing.

Mr. and Mrs. Nathan T. Schreiber Memorial Scholarship — A scholarship of \$250 is awarded to a sophomore or junior on the basis of scholarship, promise and ability.

Steven J. Weiss Memorial Scholarship — A scholarship is awarded to an outstanding freshman, sophomore or junior student.

AWARDS

Delta Kappa Gamma Award — This award of \$100 is given to an outstanding girl of the senior class for personal and social attributes, skill in teaching, and interest in personal growth.

Fred M. Richmond Award — A medal is given to a member of the graduating class who is a major in Industrial Education and who has shown the greatest achievement and unusual promise of success in mechanical drawing.

Outside Aid

STATE SCHOLARSHIP

The New Jersey State Scholarship Commission awards scholarships of \$500 a year or the amount of tuition, whichever is less, to students who are within a year of high school graduation or within five years after high school graduation if they have not attended college previously. Criteria for awards are financial need and academic achievement. Applications can be obtained from high school guidance offices, college financial aid offices or the New Jersey State Scholarship Commission, Box 1293, Trenton, New Jersey 08625.

GUARANTEED STUDENT LOANS

Full-time matriculated students who are residents of New Jersey may borrow up to \$2,500 per year and half-time students up to \$500. If the adjusted family income is less than \$15,000, the interest may be subsidized by the federal government while a student is in college. The simple annual interest charge is seven percent. A student applies to participating banks for application forms.

Only college-administered programs and the largest state programs have been described here. Applicants should investigate outside aid through high school guidance offices and agencies such as the Veterans' Administration, Rehabilitation Commission and Social Security Administration.

Directories

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Executive Officers

Nathan Weiss, *President*

Laurence A. Dorr, *Vice President for Academic Affairs*

John S. Korley, *Vice President for Administration and Finance*

Foster F. Diebold, *Director of College Development*

James Benson Parks III, *Dean of Students*

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Ralph E. Cullmann, *Chairman, Department of Chemistry-Physics*

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Fred R. Schwartz, *Chairman, Department of Fine Arts*

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Georgianna A. Lynn, *Assistant Dean of the School of Education*

Willard E. Zweidinger, *Acting Associate Dean of Health, Physical Education, Recreation and Athletics*

Albert Mazurkiewicz, *Chairman, Department of Communication Sciences*

June Handler, *Chairman, Department of Early Childhood Education*

Jane Guinnane, *Chairman, Department of Educational Arts and Systems*

John T. Tehie, *Chairman, Department of Educational Policy Sciences*

Kenneth Benson, *Chairman, Department of Health and Physical Education*

Vance Snyder, *Chairman, Department of Industrial Studies*

Arthur Jonas, *Chairman, Department of Special Education and Individualized Services*

Richard J. Nichols, *Dean of the Division of Graduate Studies*

Administrative Offices

OFFICE OF THE PRESIDENT

Nathan Weiss, President

Frederick R. Marder, Executive Assistant to the President

Charles T. Kimmett, Assistant to the President

OFFICE OF THE VICE PRESIDENT FOR ACADEMIC AFFAIRS

Laurence A. Dorr, Vice President

Dexter W. Pease, Aide to the Vice President

Academic Administrative Services

Charles J. Longacre, Dean

George Sisko, Assistant Dean

Academic and Career Planning

Joseph A. Vitale, Director

Admissions

E. Theodore Stier, Director

Registration

Jacques Loeliger, Registrar

Summer School and Special Programs

Marion L. Parsons, Director

Cooperative Education

Wesley P. Daniels, Director; Coordinator for Consortium of East Jersey

Exceptional Educational Opportunities Program

Wilmoth F. Roberts, Director

Instructional Resource Center

Joel E. Ginsburg, Director

Library Services

Louis N. Nagy, Director

OFFICE OF THE VICE PRESIDENT FOR ADMINISTRATION AND FINANCE

John S. Korley, Vice President

William J. Milks, Assistant to the Vice President

Business Services

Edward J. Callaghan, Director

Computer Services

Eugene J. Keenoy, Director

Institutional Planning

C. Harrison Hill, Director

Facilities

Armand Brillante, Director

OFFICE OF THE DIRECTOR OF COLLEGE DEVELOPMENT

Foster F. Diebold, Director

Arthur F. Kirk, Jr., Assistant Director

Ellen C. Margolis, Administrative Assistant

Alumni Affairs

William Loehning, Director

College Projects

Carol L. Moore, Coordinator

College Publications

Helene Ershow, Supervisor

College Public Relations

James E. Jandrowitz, Director

Institutional Research

Elsie M. Dollmann, Director

OFFICE OF THE DEAN OF STUDENTS

James Benson Parks III, Dean

Patrick J. Ippolito, Associate Dean

Counseling Center

Edward S. Butler, Director

Financial Aid

Clare Davies, Director

Health Services

Joanne Pederson, Director

Housing

Andrea Abramson, Director

Student Activities

Marion Kortjohn, Director

Faculty and Administrative Personnel 1972-1973

NATHAN WEISS (9-61), *President*

Professor, Political Science

B.A., Montclair State College; M.A., Rutgers University;
Ph.D., New York University

EUGENE G. WILKINS (9-45), *President Emeritus*

Distinguished Service Professor, Educational Policy Sciences

B.A., North Texas University; M.A., Ph.D., Columbia University

FRANCINE ABELES (9-64), *Professor, Mathematics*

A.B., Barnard College; M.A., Ed.D., Columbia University

ANDREA B. ABRAMSON (9-71), *Director, Housing Services*

B.S., State University College, Brockport;

M.S., State University of New York, Albany

MICHAEL ADAMS (5-72), *Coordinator, Audio-Visual Center*

Institutional Resource Center

B.A., Seton Hall University

SERAFIN S. ALEMAN (9-70), *Assistant Professor, Foreign Languages*

B.A., City College of New York; M.A., Ph.D., New York University

ROBERT F. ALLEN (9-58), *Professor, Educational Policy Sciences*

B.Ed., State University of New York at Plattsburg;

M.A., Ph.D., New York University

PHYLLIS D. ALLISTON (9-68), *Instructor, Educational Arts and Systems*

B.S., Newark State College; M.A., Montclair State College

BEVERLEY T. AMICK (9-70), *Assistant Professor, Educational Arts and Systems*

B.A., M.A., Paterson State College; Ed.D., Rutgers University

ROBERT C. ANDREWS (9-68), *Assistant Professor, Communication Sciences*

B.A., Seton Hall University; M.A., Newark State College

WALTER ANDZEL (9-69), *Instructor, Health and Physical Education*

B.S., M.A., Murray State University

CONRAD C. ANGEBRANDT (9-63), *Assistant Professor, Industrial Education*

B.S., Newark State College; M.A., Montclair State College

WILLIAM P. ANGERS (9-62), *Professor, Psychology*

A.B., Providence College; M.A., Catholic University;

Ph.D., University of Montreal; Ph.D., University of Ottawa

ROBERT F. ARIOSTO (9-72), *Assistant Director, Student Activities*

B.A., Seton Hall University;

M.A., Teachers College, Columbia University

FREDERIC G. ARNOLD (9-56), *Professor, Biological Sciences*

Chairman, Department of Biological Sciences

B.A., M.A., Montclair State College; Ed.D., Columbia University

CHANA H. AUERBACH (9-72), *Demonstration Teacher, Institute of Child Study*

B.S., New York State University College;

M.A., Teachers College, Columbia University

TAMARA K. AVDZEJ (10-72), *Librarian*

B.A., Rutgers University; M.A., New York University;

M.L.S., Indiana University

FRANK E. BACHKAI (9-66), *Associate Professor, Special Education*

and Individualized Services

B.S., West Chester State College; M.Ed., Temple University;

D.Ed., University of Mississippi

ELLEN BAKER (9-70), *Associate Professor, Psychology*

B.A., New York University; B.S., Ph.D., University of London

RICHARD S. BAKKER (9-69), *Instructor, Health and Physical Education*

B.A., Montclair State College; M.A., University of Southern Illinois

SERAFINA T. BANICH (9-63), *Professor, Educational Arts and Systems*

B.S., Jersey City State College; M.S., Fordham University

Ed.D., Columbia University

SEYMOUR BARASCH (10-69), *Director, Adult Education Resource Center*

B.B.A., City College of New York; M.A., New York University

DAVID L. BARNHART (9-69), *Assistant Professor, Special Education and*

Individualized Services

B.S., Bloomsburg State College; M.A., Columbia University

LINDA BASTIAN (12-71), *Instructor, Fine Arts*

B.A., Antioch College; M.Ed., Tufts University;

Ph.D., New York University

CARMINE J. BATTISTA (9-67), *Instructor, History*

B.A., M.A., New York University

IRENE BAUER (9-68), *Instructor, Foreign Languages*

B.S., Shippensburg State College; M.A., Rutgers University

W. JOHN BAUER JR., (9-65), *Associate Professor, English*

A.B., Rutgers University; M.A., New York University

KENNETH R. BENSON (9-59), *Professor, Health and Physical Education*

Chairman, Department of Health and Physical Education

B.S., M.A., Ed.D., New York University

KEVORK R. BERBERIAN (6-69), *Librarian*

B.A., Haigazian College, Lebanon; M.L.S., State University of New York

ADRIAN BERNAGOZZI (9-72), *Instructor, Industrial Studies*

B.S., M.S., Rochester Institute of Technology

BEVERLY S. BERRY (6-69), *Assistant Director*

Exceptional Educational Opportunities Program

B.S., Winston Salem Teachers College; M.A., Seton Hall University

BRYNA S. BERSON (9-66), *Assistant Professor, Special Education*

and Individualized Services

B.A., University of Connecticut; M.A., Newark State College

DAVID S. BILOWIT (9-67), *Professor, Special Education*

and Individualized Services

B.S., M.A., Teachers College, Columbia University; Ph.D., New York University

MICHAEL E. BLAKE (8-72), *Administrative Assistant, Institutional Planning*

B.A., University of Notre Dame

LULA M. BLOCTON (9-72), *Instructor, Fine Arts*

B.F.A., University of Michigan; M.F.A., Indiana University

DANIEL T. BLOUNT (11-59), *Associate Professor, Chemistry-Physics*

B.S., Rolla School of Mines, Rolla, Missouri;

M.S., Washington University, St. Louis, Missouri

EDA L. BOLY (9-64), *Assistant Professor, Biological Sciences*

B.A., Hunter College; M.A., Columbia University

NANCY BRILLIANT (9-66), *Assistant Professor, English*

B.A., Brooklyn College; M.A., Boston University

ARMAND BRILLIANTE, *Director, Facilities*

RUTH L. BRONSTEIN (9-70), *Assistant Professor, Early Childhood Education*
B.A., Hunter College; M.A., Ed.D., Teachers College, Columbia University

ANNAJEAN BROWN (9-67), *Associate Professor, Music*
B.Mus. Ed., Drake University; M.Mus., American Conservatory of Music;
Ed.D., Teachers College, Columbia University

BETSEY J. S. BROWN (8-70), *Director, Project EVE*
B.S., Syracuse University; M.A., Teachers College, Columbia University

ROBERT O. BRUEL (2-68), *Associate Professor, Psychology*
B.A., M.S., City College of New York;
Ed.D., Teachers College, Columbia University

JAMES E. BUCHANAN (9-71), *Assistant Professor, History*
B.A., State University College; Potsdam;
M.A., University of Massachusetts

MARTIN S. BUCHNER (9-61), *Associate Professor, Fine Arts*
B.S., Newark State College; M.A., New York University

WERNER C. BURGER (9-61), *Professor, Fine Arts*
B.S., M.A., New York University

GEORGE T. BURTT (9-61), *Professor, Philosophy*
Chairman, Department of Philosophy
B.S., Bucknell University; Ed.M., Ed.D., Rutgers University

CLIFFORD L. BUSH (9-58), *Professor, Communication Sciences*
B.Ed., Cortland State Teachers College, Cortland, New York;
M.Ed., Alfred University; Ed.D., Syracuse University

JOHN E. BUTCHER (9-69), *Assistant Professor, Educational Arts and Systems*
B.S., M.A., California State Polytechnic College; M.S.T., Rutgers University

EDWARD S. BUTLER (6-71), *Director, Counseling and Psychological Services*
B.A., Ph.D., University of Buffalo

ROBERT C. BYRD (8-71), *Counselor, Psychological Services*
B.A., Duke University; B.D., Yale University;
M.A., Ed.D., Rutgers University

CAROL B. CADE (9-64), *Assistant Professor, Fine Arts*
B.A., Hendrix College; M.A., Columbia University

HARRY S. CASH (9-70), *Assistant Professor, Mathematics*
B.A., M.S., Rutgers University

EDWARD J. CALLAGHAN (9-64), *Director, Business Services*
B.S., Seton Hall University

ILONA S. CAPARROS (7-72), *Librarian*
B.A., University of New Hampshire; M.L.S., Simmons College

CAROLYN W. CARMICHAEL (9-71), *Associate Professor, Communication Sciences*
B.S., The Kings College; M.A., Ball State University;
Ph.D., Michigan State University

PATRICIA A. CARUSO (1-70), *Personnel Officer*
B.S., Fairleigh Dickinson University

JOSEPH S. CATALONO (9-66), *Associate Professor, Philosophy*
B.A., St. John's University; M.A., Ph.D., St. John's University

ROBERT CHASNOFF (9-58), *Professor, Educational Arts and Systems*
B.A., University of Connecticut; M.A., Ed.D., Columbia University

FREDERICK W. CHRISTOFFEL (9-65), *Professor, Industrial Studies*
B.S., Newark State College, M.S., Columbia University;
Ed.D., New York University

JOSEPH D. CLINTON (9-70), *Assistant Professor, Industrial Studies*
B.S., Kansas State; M.S., Southern Illinois University

ZARA R. COHAN (9-70), *Instructor, Fine Arts*
B.S., M.A., Newark State College

SHELBY RUTH COHEN (9-70), *Associate Professor, Educational Psychology*
B.S., University of Cincinnati; B.A., University of Pennsylvania;
M.S., Queens College; Ph.D., New York University

DANIEL B. COKEWOOD (9-68), *Instructor, Industrial Studies*
B.S., M.A., Ball State University

ROBERT COON (1-67), *Associate Professor, Fine Arts*
B.A., University of Pacific; M.A., Ed.D., Teachers College,
Columbia University

JOHN V. CORNISH (9-68), *Instructor, Fine Arts*
B.A., M.A., Jersey City State College

WILLIAM A. CORRIE (9-63), *Assistant Professor, Educational Arts and Systems*
B.S., M.Ed., Temple University

ANTHONY A. CROCE (9-72), *Instructor, Sociology, Anthropology, and
Social Work*
B.A., Fordham University; M.A., St. John's University

BARNA CSUROS (10-71), *Associate Director, Library Services*
LL.D., University of Budapest; M.L.S., Columbia University

JAMES W. CULLEN (9-68), *Instructor, Music*
B.S., Ed.M., Temple University

RALPH E. CULLMANN (9-63), *Professor, Chemistry-Physics*
Chairman, Department of Chemistry-Physics
B.S., Wisconsin State College, LaCrosse; M.A., Ed.D., Columbia University

BENTON B. CUMMINGS (9-69), *Assistant Professor, Health and Physical Education*
B.S., University of Massachusetts; M.A., New York University

KAREN I. CUNNINGHAM (6-70), *Assistant Registrar*
B.A., M.A., Newark State College

GEORGE S. CURRIER (9-60), *Assistant Professor, English*
B.S., Litt.M., University of Pittsburgh

WESLEY P. DANIELS (7-61), *Director, Cooperative Education*
Assistant Professor
B.S., Ed.M., Rutgers University

JOSEPH S. DARDEN JR., (9-64), *Professor, Health and Physical Education*
A.B., Lincoln University; M.A., Ed.D., New York University

CLARE DAVIES (9-61), *Director, Financial Aid*
Assistant Professor
B.A., George Washington University; M.A., Columbia University

DAVID A. DEAN (7-72), *Assistant Director, Athletics*
B.S., M.A., Trenton State College

ALAN R. DEBIASIO (10-72), *Assistant Registrar*
B.A., Newark State College

JOAN R. deCRENASCOL (9-60), *Assistant Reference Librarian*
B.A., Hunter College; M.L.S., Rutgers University

CHARLES DeFANTI (9-67), *Assistant Professor, English*
B.A., Queens College; M.A., New York University

JOSEPH DeIVECCHIO (9-66), *Assistant Professor, Educational Arts and Systems*
B.A., M.A., Montclair State College

ALLINE C. DeVORE (9-72), *Assistant Professor, Early Childhood Education*
B.A., New York University; M.S., City College of New York

HOWARD F. DIDSBURY JR. (9-60), *Professor, History*
B.A., Yale University; M.A., Harvard University;
Ph.D., The American University, Washington, D.C.

FOSTER F. DIEBOLD (9-69), *Director, College Development*
Instructor
A.A., B.S., Monmouth College; M.A., Seton Hall University

R. DANIEL DISALVI (9-66), *Associate Professor, Psychology*
B.S., West Chester State; M.Ed., University of Delaware;
D.Ed., University of Pennsylvania

MATTHEW DOLKEY (9-52), *Professor, English*
B.A., Wayne University; M.A., Ed.D., Columbia University

ELSIE M. DOLLMANN (9-72), *Director, Institutional Research*
B.A., Hunter College
M.S., Ph.D., New York University

LAURENCE A. DORR (6-71), *Vice President, Academic Affairs*
Professor of Education
A.B., M.A., Boston College; S.T.L., Collège Philosophique et
Théologique de St. Albert, Louvain, Belgium;
Ph.D., University of Michigan

JAMES E. DORSEY (9-61), *Professor, Music*
A.B., Lincoln University; Mus.B., M.A., University of Pennsylvania
Ed.D., Columbia University; Ph.D., University of Pennsylvania

HARRY N. DUBIN (9-61), *Professor, Special Education and*
Individualized Services
B.S., M.S., Ed.D., Temple University

MARY D. DUMAIS (11-65), *Instructor, Early Childhood Education*
B.S., Fordham University; M.A., Columbia University

MARGARET H. DUNN (9-71), *Instructor, English*
B.F.A., University of Arizona; M.S., Southern Illinois University

ORLANDO EDREIRA (9-68), *Associate Professor, Foreign Languages*
Dr. of Law, University of Havana; M.A., City College of New York
Ph.D., Columbia University

GRAYDON L. EKDAHL (9-72), *Instructor, Foreign Languages*
B.A., Middlebury College; M.A., University of Mainz, Germany;
M.A., Princeton University

DORIS L. ENGELHARD (9-64), *Assistant Professor, Music*
B.S., B.M., M.A., Ohio State University

FREDERICK J. ENGLANDER (9-72), *Instructor, Economics, Geography*
and Management Science
B.B.A., University of Massachusetts; M.A., Rutgers University

JOSEPH ERRINGTON (9-57), *Professor, Health and Physical Education*
B.P.H.E., University of Toronto, Canada; M.Sc., P.E.D., Indiana University

HELENE ERSHOW (10-69), *Supervisor, College Publications*
B.A., Douglass College

FRANK J. ESPOSITO (9-70), *Assistant Professor, Educational Arts and Systems*
B.A., M.A., Glassboro State College

WILLIAM R. EVANS (9-70), *Associate Professor, English*
B.A., Dartmouth College; M.A., Ph.D., Columbia University

GERARD C. FANELLI (9-70), *Assistant Professor, Special Education*
and Individualized Services
B.S., Rutgers University; M.A., Montclair State College;
Ph.D., Columbia University

RHODA Y. FEIGENBAUM (9-65), *Instructor, Psychology*
B.S., Hunter College; M.S., University of Wisconsin

FRANCISCO E. FEITO (9-69), *Assistant Professor, Foreign Languages*
B.A., Edison College, Cuba; M.A., Rutgers University;
LL.D., University of Havana

WILLIAM J. FELDMAN (9-68), *Instructor, Music*
B.S., Teachers College, West Chester, Pa.; M.S., Teachers College, Columbia University

MARK M. FERRARA (9-67), *Assistant Director, Library Services*
Assistant Professor, Library Science
B.S., M.A., Seton Hall University; M.A., Jersey City State College;
M.L.S., Rutgers University

CHARLES B. FETHE (9-69), *Assistant Professor, Philosophy*
B.A., Johns Hopkins University;
M.A., University of Illinois; Ph.D., New York University

EUGENE B. FINCH (9-69), *Professor, Economics, Geography and*
Management Science
B.A., M.A., University of Allahabad; Ph.D., Syracuse University

ELAINE B. FISHER (9-68), *Instructor, Special Education*
and Individualized Services
B.A., Jersey City State College; M.A., Newark State College

JANE E. FLAHERTY (3-70), *Assistant Director, Adult Education Resource Center*
B.S., Notre Dame College

LEONARD P. FORMAN (9-71), *Instructor, Economics, Geography and*
Management Science
B.A., Queens College; M.A., New York University

HARRY W. FOSKEY (9-59), *Associate Professor, Educational Arts and Systems*
B.S., State Teachers College, Salisbury, Maryland;
M.A., George Washington University

MAX G. FRANKEL (9-70), *Professor, Special Education and*
Individualized Services
B.A., M.A., University of Oklahoma; Ph.D., St. Louis University

D. BRUCE FRANKLIN (9-69), *Assistant Professor, Educational Policy Sciences*
A.B., Wesleyan University; A.M., Teachers College; Columbia University
Dip.Ed., Makerere University, Uganda

GEORGE H. FRAUNFELKER (9-68), *Associate Professor, Psychology*
M.A., Harvard University; M.Ed., M.S., Ed.D., Rutgers University

RIBERT J. FRIDLINGTON (9-63), *Associate Professor, History*
B.A., M.A., Drake University

JOHN H. FROUDE (9-66), *Assistant Professor, Educational Arts and Systems*
B.S., Ed.M., Rutgers University

ZELLA FRY (9-58), *Associate Professor, English*
B.A., University of Alberta, Canada; M.A., Columbia University

HOWARD B. FURER (9-63), *Professor, History*
B.A., M.A., Ph.D., New York University

ROBERT J. FYNE (9-67), *Assistant Professor, English*
B.A., Jersey City State College; M.A., Seton Hall University

CATHERINE D. GAINES (9-69), *Assistant Professor, Early Childhood Education*
B.S., Jersey City State College; M.A., Newark State College

REGINA H. GARB (9-59), *Professor, Mathematics*
B.S., Newark State Teachers College; M.A., New York University
M.S., Fairleigh Dickinson University
Ed.D., Columbia University

JOEL E. GINSBURG (3-72), *Director, Media and Technology*
B.S., Fairleigh Dickinson University; M.A., Paterson State College

KATHRYN A. GASOREK (9-65), *Associate Professor Special Education and Individualized Services*
A.B., Douglass College; A.M., Columbia University;
Ph.D., Teachers College, Columbia University

JOHN J. GATTI (9-71), *Assistant Professor, Educational Arts and Systems*
B.S.S., Georgetown University; M.A., New York University

CAESAR T. GAZA (9-66), *Associate Professor, Special Education and Individualized Services*
A.B., Washington Square College; M.S., Ph.D., New York University

GEORGE W. GENS (9-51), *Professor, Special Education and Individualized Services*
Director, Speech and Hearing Services
B.A., M.A., Ph.D., University of Michigan

JOHN O. GERRISH (9-45), *Assistant Professor, Music*
Four-year Diploma, Crane Normal School Potsdam, New York;
M.Mus., Syracuse University

PAULA GETZIN (9-69), *Assistant Professor, Chemistry-Physics*
B.A., Radcliffe College; M.A., Ph.D., Columbia University

VITO GIACALONE (9-66), *Assistant Professor, Fine Arts*
B.A., Montclair State College; M.A., M.F.A., University of Iowa

ELSIE S. GIEGERICH (9-66), *Instructor, Mathematics*
B.S., Douglass College; Ed.M., Rutgers University

DAVID A. S. GOLD (9-72), *Instructor, Communication Sciences*
B.A., M.A., M.A., New Mexico Highlands University

DOROTHY W. GOLDBERG (9-66), *Assistant Professor, Mathematics*
B.A., Hunter College; M.S., Yeshiva University

NATHAN GOLDBERG (9-57), *Associate Professor, History*
B.A.; M.A., Boston University

THOMAS H. GOLDEN (9-70), *Assistant Professor, Psychology*
B.A., Cornell University; M.A., Long Island University;
Ph.D., University of Miami

JEANNE GOLDSTEIN (1-70), *Assistant Registrar*
B.A., Brooklyn College; M.A., Teachers College, Columbia University

HERBERT GOLUB (9-65), *Associate Professor, Music*
Chairman, Department of Music
B.S., M.A., New York University

E. AUSTIN GOODWIN (9-65), *Associate Professor, Fine Arts*
B.S., Ball State Teachers College, Muncie, Indiana; M.A., Columbia University

IRWIN GRACE (9-63), *Professor, Music*
B.B.S., City College, New York; M.A., New York University; Ed.D., Teachers College, Columbia University

ROBERT L. GRANGER, SR., (7-70), *Dean, School of Education*
Professor, Educational Administration
B.A., University of Northern Iowa; M.M., New England Conservatory;
M.A., Ph.D., University of Minnesota

CONRAD GRAVES (9-72), *Assistant Professor, Sociology, Anthropology and Social Work*
B.A., Virginia Union University; M.S.W., Columbia University

PEARL GREENBERG (9-65), *Professor, Fine Arts*
B.S., M.A., New York University; Ed.D., Teachers College, Columbia University

CHARLES F. GRIFFIN (4-72), *Counselor, Psychological Services*
A.B., Marshall University; M.A., Columbia University;
M.A., Syracuse University

JANE E. GUINNANE (9-58), *Professor, Educational Arts and Systems*
Chairman, Department of Educational Arts and Systems
B.S., University of Michigan; M.S., Cornell University
Ed.D., Florida State University

FREDERICK J. GUNTHER (9-72), *Instructor, Earth and Planetary Environments*
B.A., University of San Diego; B.S., San Diego State College;
M.S., University of Minnesota; Ph.D., Oregon State University

ROBERT E. L. HACKE (9-70), *Associate Professor, English*
B.A., University of Arizona; B.D., McCormick Seminary;
Ph.D., University of St. Andrews

JOHN E. HAFFLY (9-63), *Assistant Professor, Special Education and Individualized Services*
B.A., Jersey City State College; M.A., Columbia University

ALEXANDER HALL (9-65), *Associate Professor, Earth and Planetary Environments*
Chairman, Department of Earth and Planetary Environments
B.S., Morehouse College; M.S., Atlanta University

JOSEPH T. HANCOCK (9-62), *Professor, Educational Policy Sciences*
B.S., M.Ed., D.Ed., Rutgers University

JUNE M. HANDLER (3-65), *Professor, Early Childhood Education*
Chairman, Department of Early Childhood Education
A.B., Brown University; M.S., Bank Street College; Ed.D., Columbia University

MARTIN S. HARRIS (9-70), *Instructor, Psychology*
B.A., Queens College; M.A., Connecticut College

NORMAN E. HARRIS (9-64), *Associate Professor, Psychology*
A.B., University of Missouri; B.S., Washington University;
M.A., Columbia University

MARILYN M. HART (9-66), *Instructor, Special Education and Individualized Services*
B.S., Seton Hall University; Ed.M., Rutgers University

RONALD T. HARTSHORN (9-71), *Instructor, Fine Arts*
B.A., Newark State College; M.F.A., Alfred University

STEPHEN J. HASELTON (6-71), *Dean, School of Arts and Sciences*
Professor, English
A.B., Hamilton College; M.A., Ph.D., Columbia University

MARCELLA C. HASLAM (9-64), *Counselor, Psychological Services*
A.B., Radcliffe College; M.S., Simmons College; M.A., Newark State College

FREDERICK C. HATFIELD (9-72), *Instructor, Health and Physical Education*
B.S., Southern Connecticut State College; M.S., University of Illinois

M. ARIF HAYAT (9-71), *Associate Professor, Biological Sciences*
B.S., Sind University, Pakistan; M.A., University of Texas
Ph.D., Indiana University

MADelyn M. HEALY (9-72), *Associate Professor, Special Education and Individualized Services*
B.A., New York State College; M.A., Ed.D., Teachers College Columbia University

SEAN D. HEALY (11-69), *Assistant Professor, Educational Policy Sciences*
B.A., Pennbroke College; M.A., Cambridge University

JOYCE C. HELLER (9-64), *Associate Professor of Special Education and Individualized Services*
B.S., Syracuse University; M.A., Brooklyn College; Ph.D., New York University

DOROTHY GRANT HENNINGS (9-65), *Professor, Educational Arts and Systems*
A.B., Barnard College; M.Ed., University of Virginia;
Ed.D., Columbia University

GEORGE HENNINGS (9-60), *Professor, Biological Sciences*
B.A., A.M., Montclair State College; M.S., Rutgers University;
Ed.D., Columbia University

MARY ANN HERRINA (9-66), *Assistant Professor, Sociology, Anthropology and Social Work*
B.A., Westminster College; M.S.W., Rutgers University

ALFONSO HERNANDEZ (7-72), *Assistant Director, Adult Education Center*
Ph.B. Th.B., St. Fulgencio College; M.A., Rutgers University

RICHARD J. HERRICK (9-62), *Professor, Educational Arts and Systems*
B.A., M.A., Montclair State College; Ed.D., New York University

HENRY E. K. HERRINGTON (9-72), *Assistant Professor, Sociology, Anthropology and Social Work*
B.A., Swarthmore College

TOM P. HERRON (9-69), *Instructor, Music*
B.A., Washington State University;
M.A., University of Idaho

WILLIAM J. HESS (9-70), *Associate Professor, Biological Sciences*
B.S., Harpur College; M.A., University of Washington;
Ph.D., University of Oklahoma

GLADYS B. HIDALGO (9-72), *Assistant Professor, Educational Arts and Systems*
B.S., M.A., College of Education, Uruguay;
M.Ed.Ad., University of Minnesota

JOSEPH B. HIGGINS (9-56), *Associate Professor, History*
B.A., M.A., State Teachers College, Albany, New York

C. HARRISON HILL, JR., (12-69), *A.I.A., Director, Institutional Planning*
B.S., Rutgers University; B.Arch., Yale University

ROBERT C. HINRICH (7-68), *Associate Registrar*
B.S., Fordham University;
M.A., New York University

LESLIE S. HIRAOKA (9-71), *Associate Professor, Economics, Geography and Management Science*
B.S., University of Washington; M.B.A., Rutgers University;
M.S., Eng.Sc.D., Columbia University

DOROTHEA L. HOLDEN (9-64), *Associate Professor, Health and Physical Education*
B.S., Columbia University; Ed.M., Rutgers University

WILLIAM M. HOLLOWAY (9-72), *Assistant Professor, Fine Arts*
B.F.A., Virginia Commonwealth University;
M.F.A., University of North Carolina

PHYLLIS HOLZSCHLAG (9-69), *Associate Professor, English*
B.A., Washington Square College;
M.A., Ph.D., New York University

GERARD J. HOTHERSALL (9-64), *Assistant Professor, Mathematics*
B.A., Hofstra College; M.A., New York University

JAMES B. HOWE (9-55), *Associate Professor, Fine Arts*
B.S., M.A., New York University

WILSON T. HOYLE (9-70), *Assistant Professor, Music*
B.M., Eastman School of Music; M.M., Yale University

LOUIS H. HUBER (9-66), *Associate Professor, Music*
Mus.B., Oberlin Conservatory of Music; M.A., Ed.D., Columbia University

ELIZABETH H. HUBERMAN (9-68), *Associate Professor, English*
Chairman, Department of English
A.B., Bryn Mawr; M.A., Ph.D., New York University

BETTY ANN HUEY (9-70), *Coordinator, Special Education Instructional Material Center*
B.A., Jersey City State College; M.A., Newark State College

JOHN G. HURLER (9-72), *Instructor, Economics, Geography and Management Science*
B.S., Seton Hall University; M.B.A., Rutgers University

RICHARD F. HURWITZ (9-72), *Assistant Director, Student Teaching*
B.S., University of Pittsburgh; M.A., Teachers College, Columbia University

JOHN C. HUTCHINSON (9-37), *Professor, Sociology Anthropology and Social Work*
B.S., Rutgers University; M.A., Ph.D., New York University

PATRICK IPPOLITO (9-65), *Associate Dean of Students*
Instructor
B.A., M.A., Newark State College

JOHN B. IRWIN (9-71), *Associate Professor, Earth and Planetary Environments*
B.S., Ph.D., University of California

MICHAEL ISRAEL (9-69), *Assistant Professor, Political Science*
B.A., Antioch College; M.A., Rutgers University

WALTER T. JABLONSKI (7-67), *Supervising Accountant*
B.S., St. Peter's College

JANICE E. JACKSON (10-69), *Assistant Director of Student Activities*
B.A., Montclair State College

CLIFFORD W. JAHN (9-62), *Assistant Professor, Industrial Studies*
B.A., Newark State College; M.A., Montclair State College

JAMES E. JANDROWITZ (9-68), *Director, College Public Relations*
Instructor
B.A., Montclair State College; M.A., University of Maryland

JOHANN JOCHNOWITZ (9-68), *Instructor, Fine Arts*
B.S., M.A., New York University

ARTHUR JONAS (9-66), *Director, Institute of Child Study*
Chairman, Department of Special Education and Individualized Services
Professor of Education
B.A., Allegheny College; M.A., Ed.D., New York University

DAVID W. JONES (9-59), *Associate Professor, Fine Arts*
B.A., M.F.A., State University of Iowa

MARGARET W. JIULIANO (8-72), *Librarian*
B.A., University of Maine; M.L.S., Rutgers University

CHARLOTTE KAHN (9-66), *Associate Professor, Psychology*
B.A., Syracuse University; M.A., Ed.D., Teachers College, Columbia University

GILBERT N. KAHN (9-70), *Instructor, Political Science*
A.B., Columbia College; M.A., Hunter College; Ph.D., New York University

LEILA KAMELL (9-65), *Instructor, Education*
B.A., Cairo University, Egypt; M.A., Columbia University

HENRY L. KAPLOWITZ (9-72), *Instructor, Psychology*
B.A., M.A., Yeshiva University

WOLFGANG W. KARBE (3-65), *Associate Professor, Health and Physical Education*
B.Ed., University of Alberta; M.A., University of California
Ph.D., New York University

HARRIET D. KAVANAGH (9-72), *Instructor, Early Childhood Education*
A.B., Mount Holyoke College; M.S., Yale University

PHYLLIS F. KAVETT (9-60), *Professor, Educational Arts and Systems*
A.B., Cornell University; M.A., Columbia University; Ed.D., Rutgers University

EUGENE J. KENNOY (8-70), *Director, Computer Services*
Sc.B., Brown University

CHARLOTTE S. KELEM (8-70), *Academic Advisor*
B.A., Brooklyn College

MARYLIN C. KELLAND (9-61), *Associate Professor, Economics, Geography and Management Science*
B.S., University of Rhode Island; M.A., Clark University

CHARLES P. KELLY (9-72), *Instructor, Political Science*
B.A., Iona College; M.A., New York University

MARIE I. KESSLER (9-72), *Instructor, Biological Sciences*
B.A., College of St. Elizabeth

CHARLES T. KIMMETT (7-67), *Assistant to the President*
B.A., Seton Hall University; M.A., Newark State College

BONNIE M. KIND (9-72), *Instructor, Psychology*
B.A., Bryn Mawr College; M.A., Ph.D., University of Pennsylvania

JOHN J. KINSELLA (9-64), *Professor, Mathematics*
A.B., State University of New York at Albany
M.A., Ed.D., Columbia University

ARTHUR F. KIRK (4-71), *Assistant Director, College Development*
B.A., Newark State College

MRS. FRANCES F. KLEEDERMAN (9-72), *Instructor, Communication Sciences*
B.A., New York University; M.A., Newark State College

MARGARET O. KNAPP (9-72), *Assistant Professor, Communication Sciences*
B.S., Penn State University; Ed.M., Rutgers University

MICHAEL E. KNIGHT (9-69), *Assistant Professor, Early Childhood Education*
B.A., M.A., Newark State College

JOHN S. KORLEY (9-66), *Vice-President, Administration and Finance*
B.A., M.A., Montclair State College

MARION D. KORTJOHN (9-67), *Director, Student Activities*
Assistant Professor
B.A., Hunter College; M.A., Columbia University

DONALD B. KRALL (2-66), *Associate Professor, Earth and Planetary Environments*
B.S., Franklin and Marshall College
M.S., Education, M.S., Geology, Syracuse University;
Ph.D., Rutgers University

CARLON A. KRANTZ (9-66), *Instructor, Mathematics*
B.S., St. Peter's College; M.A., Fordham University

STEVEN I. KRAPES (9-72), *Instructor, Special Education and Individualized Services*
B.A., Jersey City State College; M.A., Montclair State College

RICHARD L. KROLL (9-71), *Assistant Professor, Earth and Planetary Environments*
M.S., University of Massachusetts; B.S., Trinity College; Ph.D., Syracuse University

ESTHER S. KRUEGER (9-68), *Associate Professor, Health and Physical Education*
R.N., Beth Israel Hospital; B.A., Jersey City State; M.A., Montclair State College; D.Ed., Columbia University

SIDNEY KRUEGER (9-62), *Associate Professor, English*
B.S., Newark State College; M.A., Peabody College

VINCENT LARGHI (9-66), *Assistant Professor, Special Education and Individualized Services*
B.A., Seton Hall University; M.A., Columbia University

F. KEVIN LARSEN (9-57), *Associate Professor, English*
B.S., Seton Hall University; M.A., Montclair State College;
Ed.D., Rutgers University

ALICE L. LAWLOR (9-67), *Education Librarian*
Instructor, Library
B.A., Wheaton College; M.A., B.S.L.S., University of Minnesota

DONALD S. LEEDS (9-72), *Associate Professor, Communication Sciences*
A.B., A.M., New York University; Ed.D., Boston University

NORMA S. LEEDS (9-64), *Professor, Chemistry-Physics*
A.B., Hunter College; Ph.D., Rutgers University

JOHN H. LEFFLER (9-69), *Academic Advisor*
B.A., M.A., Montclair State College

CAROL M. LEHMAN (9-68), *Academic Advisor*
B.S., Pennsylvania State; M.A., Newark State College

LILLIAN W. LEMKE (9-67), *Assistant Professor, Educational Arts and Systems*
B.S., Jersey City State College; M.A., Seton Hall University;
M.A., Newark State College

GEORGE E. LEONARD (6-69), *Purchasing Officer*
B.A., Rutgers University

JANE K. LEONARD (9-70), *Assistant Professor, History*
B.A., Milwaukee Downer College; M.A., University of Idaho;
Ph.D., Cornell University

JANET G. LEONARD (10-62), *Associate Professor, Special Education and Individualized Services*
B.S., Newark State College; M.A., Seton Hall University;
Ed.D., Rutgers University

HERMAN I. LEPP (9-47), *Professor, Educational Arts and Systems*
B.S., State Teachers College, Trenton; M.A., Columbia University;
Ed.D., Rutgers University

DOMINIC V. LETTERESE (9-67), *Assistant Professor, History*
A.B., Fordham College; M.A., Fordham University

MARJORIE LEVIN (9-71), *Instructor, Sociology, Anthropology and Social Work*
B.A., Brooklyn College; M.A., New York University

JOAN L. LEVINE (9-63), *Professor, Mathematics*
Chairman, Department of Mathematics
B.S., Antioch College; M.A., Ed.D., Columbia University

JUDITH LEVINE (9-72), *Instructor, Sociology, Anthropology and Social Work*
B.A., M.A., Rutgers University

ADEN G. LEWIS (9-68), *Assistant Professor, Music*
B.S., Frostburg State College; M.Ed., Pennsylvania State College

ALAN J. LEWIS (9-71), *Assistant Professor, Biological Sciences*
B.S., Wisconsin State University; Ph.D., Rutgers University

MARY F. LEWIS (9-71), *Assistant Professor, History*
B.A., University of Minnesota; M.A., University of Wisconsin

DUANE B. LINDEN (9-65), *Professor, Biological Sciences*
A.B., Hiram College; Ph.D., University of Minnesota

RICHARD M. LINKH (9-72), *Assistant Professor, Educational Arts and Systems*
B.A., M.A., Hunter College

BETTY L. LINTHICUM (9-57), *Professor, Biology*
B.S., Florida State University; M.S., Ph.D., University of Michigan

HENRY B. LIPSCOMB III (9-65), *Assistant Professor, Fine Arts*
B.A., Randolph-Macron College; M.A., American University

STANLEY H. LIPSON (9-66), *Assistant Professor, Mathematics*
B.S., Trinity College; M.A., Ed.D., Columbia University

WILLIAM F. LOEHNING (6-72), *Director, Alumni Affairs*
B.A., Newark State College

JACQUES H. LOELIGER (6-62), *Registrar*
Instructor
B.A., University of Virginia; M.A., Columbia University

CHARLES J. LONGACRE, JR., (1-56), *Dean, Academic Administrative Services*
Associate Professor
B.A., Washington and Lee University; M.A., New York University

NEIL M. LORBER (9-68), *Associate Professor, Psychology*
A.B., M.S., Brooklyn College; M.A., Ph.D., New York University

CARLA G. LORD (9-70), *Assistant Professor, Fine Arts*
B.A., Smith College; M.A., Ph.D., Columbia University

ROCCO E. LORUSSO (9-62), *Professor, Educational Policy Sciences*
B.S., Newark State College; M.A., Teachers College, Columbia University;
Ed.D., University of Maryland

JAMES C. LOVETT (9-72), *Assistant Professor, Educational Arts and Systems*
B.A., Ph.D., University of Texas

IRVING F. LUSCOMBE (9-51), *Professor, History*
B.A., Tufts College; Fletcher School of Law and Diplomacy
M.A., Harvard University; Ph.D., New York University

GEORGE W. LUTHER III (9-72), *Assistant Professor, Chemistry-Physics*
B.A., LaSalle College; Ph.D., University of Pittsburgh

ROLLAND RAY LUTZ, JR., (9-63), *Professor, History*
A.B., College of Puget Sound; M.A., University of Chicago;
Ph.D., Cornell University

GEORGIANNA A. LYNN (9-71), *Assistant Dean, School of Education*
Assistant Professor
B.S., Cornell University; M.A., Ph.D., New York University

CAROLINE R. MADISON (9-62), *Professor, Biology*
B.S., University of Georgia; M.Sc., Ph.D., Ohio State University

ETHEL J. MADSEN (9-66), *Assistant Director, Summer Sessions and Special Programs*
Instructor
B.A., M.A., Newark State College

JUAN J. MAGRANS (9-71), *Supervisor, Language Laboratory Instruction,*
Foreign Languages
LL.D., University of Havana

JOSEPH J. MAHONEY JR., (9-72), *Instructor, Biological Sciences*
B.S., M.S., University of Rhode Island; Ph.D., University of Georgia

JANE C. MALBROCK (9-71), *Assistant Professor, Mathematics*
B.A., Montclair State College; M.A., Ph.D., Pennsylvania State University

SUSAN G. MARCHAND (9-66), *Instructor, Mathematics*
B.A., Douglass College; M.S., Rutgers University

FREDERICK R. MARDER (9-59), *Executive Assistant to the President*
Assistant Professor
B.S., M.S., Pennsylvania State University

ELLEN C. MARGOLIS (3-73) *Administrative Assistant, College Development*
B.A., University of Miami

GENEVIEVE MARKHOLM (5-52), *Associate Professor, Fine Arts*
B.S., State Teachers College, St. Cloud, Minnesota;
M.A., Columbia University

DOROTHY C. MARKLE (9-62), *Assistant Professor, Foreign Languages*
B.A., M.A., Montclair State College; Diploma, University of Toulouse

DONALD J. MAROUN (9-68), *Assistant Director, Student Activities*
Instructor
B.S., State University, Buffalo; M.S., State University, Albany

ROBERT E. MASLO (10-72), *Assistant Director, Residence Students*
B.A., M.A., Jersey City State College

EDWARD MATLUCK (9-72), *Instructor, Economics, Geography and Management Science*
B.A., State University of New York

JEAN MATTSON (11-71), *Supervisor, Audio-Visual Services*
B.A., Newark State College

DEBORAH C. MAY (9-72), *Project Specialist, Child Study Institute*
B.S., Skidmore College; M.A., Teachers College, Columbia University

ROBERT S. MAYER (9-68), *Associate Professor, History*
B.S., M.A., Ph.D., Rutgers University

BEATRICE H. MAYES (9-71), *Instructor, Communication Sciences*
B.S., St. Lawrence University; M.Ed., Rutgers University

MARY LOU MAYO (9-72), *Assistant Professor, Sociology, Anthropology and Social Work*
B.A., Albertus Magnus College; M.A., Fordham University

ALBERT J. MAZURKIEWICZ (9-66), *Professor, Communication Sciences*
Chairman, Department of Communication Sciences
A.B., Ursinus College; A.M., University of Pennsylvania;
Ed.D., Temple University

JOHN F. McCARTHY (1-70), *Administrative Assistant, Ancillary Services*
B.A., Seton Hall University

CHARLES W. McCracken (9-62), *Professor, Special Education and*
Individualized Services
B.A., Duke University; M.S., University of Pennsylvania
Ph.D., Ohio State University

JOSEPH E. McDONALD (9-72), *College Physician*
M.D., New York University, College of Medicine

BERNARD T. McLENNAND (9-71), *Associate Professor, Industrial Studies*
B.S., California State College; M.A., Ball State University;
Ed.D., Texas A & M University

PAMELA A. McMILLAN (9-71), *Assistant Director, Financial Aid*
B.A., Fisk University; Ed.M., Rutgers University

VERA BRANTLEY McMILLON (9-70), *Instructor, Educational Arts and Systems*
B.A., M.A., Howard University

WILLIAM A. MERCER (6-61), *Professor, Psychology*
A.B., Upsala College; Ed.M., Ed.D., Rutgers University

VINCENT V. MERLO (9-67), *Instructor, Communication Sciences*
Assistant Audio-Visual Consultant
B.A., M.A., Newark State College

DOROTHY S. MESSERSCHMITT (9-72), *Instructor, English*
B.A., M.A., University of Michigan

GEORGE D. METREY (9-70), *Associate Professor, Sociology, Anthropology*
and Social Work
Coordinator, Social Work
A.B., Marquette University; M.S.W., Fordham University
Ph.D., New York University

ROBERT METZ (9-67), *Associate Professor, Earth and Planetary Environments*
B.S., City College of New York; M.S., University of Arizona;
Ph.D., Rensselaer Polytechnic Institute

MICHAEL J. METZGER (9-65), *Assistant Professor, Fine Arts*
B.S., State University at Buffalo; M.F.A., Cranbrook Academy of Art

A. LEE MEYERSON (9-62), *Associate Professor, Earth and Planetary Environments*
A.B., University of Pennsylvania; M.S., Ph.D., Lehigh University

WILLIAM J. MILKS (5-72), *Assistant to the Vice President*
for Administration and Finance
B.A., Southern Illinois University

HIROKO A. MIYAKAWA (9-71), *Instructor, Early Childhood Education*
B.S., Drake University; M.A., New York University

MICHAEL F. MONTGOMERY (9-65), *Associate Professor, Music*
B.S., Pennsylvania State Teachers College; M.A., New York University

CAROL L. MOORE (8-71), *Coordinator, College Projects,*
College Development
B.S., Morgan State College; M.A., Newark State College

KATHLEEN M. MOORE (9-59), *Associate Professor, Educational Arts and Systems*
B.S., Ed.M., Rutgers University

GEORGE J. MORELLI (2-68), *Assistant Professor, Psychology*
B.A., Marist College, Poughkeepsie, New York; M.A., New School for
Social Research

DAVID T. MORGAN (2-69), *Purchasing Officer*
B.A., M.B.A., Rutgers University

MURIEL MORGAN (9-58), *Professor, Psychology*
B.S., Gorham Teachers College; M.A., Ed.D., Columbia University

PETER H. MOTT (9-72), *Instructor, English*
B.A., Ph.D., Columbia University

RUTH A. MUELLER (9-66), *Academic Advisor*
Instructor
B.A., Indiana University; M.A., Newark State College

ARTHUR J. MUNIZ (2-68), *Professor, Special Education and*
Individualized Services
B.S., Trenton State College; M.Ed., Ed.D., Rutgers University

JAMES R. MURPHY (9-67), *Assistant Professor, English*
A.B., Montclair State College; M.A., Teachers College, Columbia University

ROWLAND M. MYERS (9-70), *Associate Professor, Foreign Languages*
B.S., Dartmouth College; Ph.D., Johns Hopkins University;
Diploma, Sorbonne

LOUIS N. NAGY (9-69), *Director, Library Services*
Professor
B.A., College of the Hungarian Reformed Church;
B.S., S.T.M., Seminary of the Hungarian Reformed Church;
Ph.D., Peter Pazmany University, Budapest; M.L.S., Columbia University

BETTY NAKASHIMA (9-68), *Assistant Professor, Early Childhood Education*
B.A., Drake University; M.A., Newark State College

RICHARD J. NICHOLS (9-65), *Dean, Division of Graduate Studies*
Professor
B.S., M.A., Ed.D., Ball State University

ALEC NICOLESCU (9-66), *Assistant Professor, Fine Arts*
B.F.A., M.A., University of Denver

ALTON D. O'BRIEN (9-30), *Dean Emeritus*
Distinguished Service Professor, Educational Policy Sciences
B.A., Columbia College; M.A., Columbia University
Ed.D., New York University

DANIEL O'DAY (9-71), *Instructor, English*
A.B., Princeton University; B.A., Oriel College, Oxford;
M.A., Ph.D., Columbia University

STEPHEN A. OHR (9-72), *Instructor, Sociology, Anthropology and*
Social Work
B.S., Newark College of Engineering; M.A., Rutgers University

LESLIE OKIN (9-68), *Assistant Professor, English*
A.B., M.A., New York University

LUCY A. ORFAN (9-67), *Instructor, Elementary Education*
B.A., Newark State College; M.A., New York University

JOHN O'MEARA (9-59), *Audio-Visual Consultant*
Professor, Communication Sciences
B.A., Manhattan College; M.A., Niagara University
Ed.D., New York University

HERBERT PARKER (9-69), *Professor, Educational Arts and Systems*
B.S., University of Illinois;
M.A., D.Ed., Teachers College, Columbia University

JAMES BENSON PARKS III (7-70), *Dean of Students*
Associate Professor
B.S., Howard University; M.A., Seton Hall University;
Ph.D., University of Oregon

MARION L. PARSONS (3-53), *Director, Summer Sessions and Special Programs*
Associate Professor
B.A., Wells College; B.S., Pratt Institute; M.A., New York University

LOUIS J. PASHMAN (9-72), *Instructor, Philosophy*
B.A., Colgate University; M.A., Columbia University; Ph.D., New York University

CARL W. PATRICK (9-70), *Instructor, English*
B.A., Rice University; M.A., Temple University

DEXTER W. PEASE (3-67), *Aide to the Vice President, Academic Affairs*
Instructor
B.A., Upsala College; M.A., Newark State College

ORA J. PECKHAM (9-66), *Professor, Psychology*
Coordinator of School Psychology
A.B., University of Georgia; M.A., Ph.D., Duke University

JOANNE PEDERSEN (9-65), *Coordinator, Health Services*
Instructor
B.S., Seton Hall University; M.A., New York University

ELIZABETH PEDRO (7-72), *Librarian*
B.A., University of Maryland, Overseas Division
M.S., Columbia University

JOSE L. PEREZ (9-72), *Instructor, Psychology*
B.A., University of Puerto Rico; M.A., Rutgers University

STAPLES PERSINGER (9-56), *Professor, Health and Physical Education*
B.S., Sargent College; M.A., Columbia University
Ed.D., New York University

LILYAN R. PETERS (9-71), *Associate Professor, Early Childhood Education*
B.A., Brooklyn College; M.A., Ed.D., Teachers College, Columbia University

CHARLES H. PETERSON (9-67), *Instructor, Industrial Studies*
B.S., Clemson University; M.A., New York University

PAUL S. PEYSER (9-72), *Instructor, Economics, Geography and*
Management Science
B.A., Harpur College, State University of New York;
M.A., University of Wisconsin

PETER E. PEZZOLO (9-70), *Assistant Professor, Philosophy*
B.A., University of Santa Clara; M.Ph., Yale University

LEONARD C. PIERRO (9-69), *Instructor, Fine Arts*
B.A., Jersey City State College; M.A., Rutgers University

ELBERT C. PIERSON (9-65), *Assistant Professor, Educational Policy Sciences*
B.S., Trenton State College; M.A., Seton Hall University

LAWRENCE W. PITT (9-63), *Assistant Professor, Educational Policy Sciences*
A.B., Rutgers University; M.A., Columbia University

JACK E. PLATT (9-55), *Associate Professor, Music*
B.S., M.Ed., Pennsylvania State University

NEAL J. PLOTKIN (9-72), *Instructor, Mathematics*
A.B., Columbia University; M.A., Cornell University;
Ph.D., Syracuse University

ROBERT J. POLGLAZE (9-64), *Professor, Educational Policy Sciences*
B.A., M.A., Montclair State College; Ed.D., Rutgers University

SAMUEL H. POMERANTZ (4-56), *Consultant Psychiatrist*
B.S., New York University;
M.D., School of Medicine, Royal Colleges, Edinburgh, Scotland

LEON R. POMEROY (9-72), *Associate Professor, Psychology*
B.S., Roosevelt University; B.A., M.A., University of Massachusetts;
Ph.D., University of Texas

JOAQUIN A. PORTUONDO (9-66), *Associate Professor, Foreign Languages*
B.L. De La Salle, Havana, Cuba; LL.M., Oriente University; M.A., Rutgers University

JOSEPH J. PREIL (9-68), *Professor, Educational Arts and Systems*
B.A., Brooklyn College; M.A., Columbia University;
Ph.D., New York University

JUANA SYLVIA PREVAL (1-73), *College of Physician*
M.D., University of Havana

WALTER W. PRICE (9-66), *Instructor, Music*
B.S., West Chester State College; Ed.M., Temple University

LILLIAN R. PUTNAM (1-64), *Professor, Communication Sciences*
Director, Reading Clinic
B.S., State Teachers College, Bridgewater, Mass.
M.A., Radcliffe College, Harvard University;
Ed.D., Columbia University

LUCILA QUINONES (11-72), *Assistant Director, Admissions*
B.A., University of Puerto Rico

DONALD R. RAICHLE (9-51), *Professor, History*
B.B.A., City College of New York; M.A., Ph.D., Columbia University

ERMA L. RAKSANYI (9-60), *Associate Professor, Health and Physical Education*
R.N., Arcadia General Hospital, Arcadia, Florida
B.S., Jersey City State College; M.A., New York University

JOHN P. RAMOS (9-59), *Associate Professor, Educational Arts and Systems*
B.A., Randolph-Macon College; M.Ed., University of Virginia

JANIS G. RAMOTH (9-69), *Instructor, Health and Physical Education*
R.N., Hackensack Hospital; B.A., Jersey City State College;
M.A., Montclair State College

RONALD B. REICKER (9-62), *Associate Professor, English*
A.B., Bates College; B.D., Yale University; M.A., Middlebury College

IRENE P. REIFSNYDER (9-58), *Professor, English*
B.A., Berea College; M.A., Ph.D., New York University

EDITH D. RESNICK (9-61), *Associate Professor, Health and Physical Education*
B.S., University of Michigan; M.A., New York University

JOE B. RHODES (9-72), *Assistant Professor, Mathematics*
B.A., Ph.D., University of Texas

ARNOLD S. RICE (9-58), *Professor, History*
Chairman, Department of History
B.A., State University of New York at Albany; M.A., Columbia University;
Ph.D., Indiana University

DORIS A. RICH (9-66), *Assistant Professor, Health and Physical Education*
R.N., Bellevue Hospital School of Nursing;

B.S., Jersey City State College; M.A., Newark State College

EVAN C. RICHARDSON (2-43), *Professor, Educational Arts and Systems*

B.S., University of Massachusetts; M.Ed., Boston University;
Ed.D., Rutgers University

JEAN M. RICHARDSON (9-60), *Professor, Educational Arts and Systems*

B.S., M.A., Ed.D., Columbia University

SADIE RICHMAN (9-64), *Assistant to the Dean Division of Graduate Studies*
Assistant Professor

B.A., M.A., Newark State College

HARRIET R. RIDINGER (9-71), *Instructor, Health and Physical Education*

B.S., M.S., Southern Illinois University

ESTELLE M. RITCHIE (9-64), *Assistant Professor, English*

B.S., M.A., Boston State College

WILMOTH F. ROBERTS (9-68), *Director, Exceptional Educational*
Opportunities Program

Instructor

B.A., Morgan State College; M.A., New York University

HENRY W. ROBINSON (9-72), *Instructor, Earth and Planetary Environments*

B.S., State University of New York, Oneonta;

M.S., Pennsylvania State University

BEVERLY W. ROCKBURNE (9-72), *Instructor, Health and Physical Education*

B.S., Trenton State College; M.A., Teachers College, Columbia University

PAUL L. ROCKMAN (9-65), *Associate Professor, Earth and Planetary Environments*

B.A., Cornell University; M.A., Columbia University

ISRAEL P. RODRIGUEZ (9-70), *Assistant Professor, Foreign Languages*

B.A., Institute of Sagua LaGrande; D.L., University of Havana;

B.A., College of Grand Falls; M.A., University of Wyoming

RENA W. ROGGE (9-69), *Reference Librarian*

Head Instructor

B.A., Elmira College; M.L.S., Rutgers University

HENRY J. ROSS (9-70), *Instructor, Political Science*

B.A., Queens College; M.A., Rutgers University

JAY ROTH (1-67), *Associate Professor, Special Education and*

Individualized Services

B.S., Seton Hall University; Ed.M., Ed.D., Rutgers University

ROBERT H. ROTH (9-65), *Professor, Psychology*

B.S., Julliard School of Music; M.A., Ed.D., Columbia University

HOWARD RUBIN (9-69), *Assistant Professor, Political Science*

B.A., City College of New York; M.A., Ph.D., New York University

LAUREE RYSTROM (9-62), *Coordinator, Supervised Teaching Seminar*

Assistant Professor

B.A., Newark State College; M.A., Columbia University

NATHAN SACK (9-71), *Assistant Professor, Educational Arts and Systems*

B.S., Brooklyn College; M.S., City College of New York

Ph.D., New York University

MARIE E. SAINZ (9-66), *Instructor, Educational Arts and Systems*

B.A., M.A., Newark State College

MARIE A. SALANDRA (7-70), *Academic Advisor*

A.B., Newark State College; M.A., New York University

JAUTRITE M. SALINS (9-69), *Associate Professor, Foreign Languages*

B.A., New School for Social Research; M.A., Ph.D., Rutgers University

LYNN SALISBURY (9-70), *Associate Professor, Chemistry-Physics*

B.A., Western Michigan University; Ph.D., University of Michigan

EDNA DeBOLT SALT (9-49), *Associate Professor, Early Childhood Education*

B.S., M.A., Ohio State University

HERBERT W. SAMENFELD (9-57), *Professor, Psychology*

B.A., Brothers College, Drew University; M.A., Ph.D., University of Minnesota

ELISABETH D. SANDERS (9-62), *Associate Professor, English*

A.A., Stephens College; B.A., M.A., University of Pittsburgh;

B.A. (Honours), M.A., Cambridge University

DENNIS J. SANTOMAURO (9-70), *Instructor, Mathematics*

A.B., St. Peters College; M.S., Rutgers University

PHYLLIS SAPERSTEIN (9-66), *Instructor, Psychology*

A.B., Brooklyn College; M.A., Fairleigh Dickinson University

NICHOLAS SCHIAVETTI (9-71), *Associate Professor, Special Education and*
Individualized Services

B.A., Cornell University; M.A., Ph.D., Columbia University

JOAN C. SCHMIDT (9-65), *Associate Professor, Health and Physical Education*

A.B., M.A., Hunter College

ROBERT W. SCHUHMACHER (9-56), *Associate Professor, Biological Sciences*

B.A., Montclair State College; M.A., Columbia University

HOWARD SCHUMACHER (9-64), *Associate Professor, Economics,*

Geography and Management Science

Chairman, Department of Economics, Geography and Management Science

B.A., Hofstra University; M.A., Ph.D., Catholic University of America

ELEANOR E. SCHWARTZ (9-67), *Associate Professor, Communication Sciences*

B.A., Douglass College; M.L.S., Rutgers University

FRED R. SCHWARTZ (9-69), *Professor, Fine Arts*

Chairman, Department of Fine Arts

A.B., Hofstra College; M.A., Ed.D., New York University

SOL SCHWARTZ (9-69), *Associate Professor, Psychology*

B.S., M.A., City College; Ph.D., University of Michigan

VERA A. SCHWARTZ (9-72), *Instructor, Health and Physical Education*

B.S., University of Michigan; M.A., Teachers College, Columbia University

HELEN G. SCIRE (9-62), *Associate Professor, Psychology*

A.B., Hunter College; M.A., Columbia University;

A.M., Ph.D., New York University

MARY R. SCOTTO (9-65), *Associate Professor, English*

B.S., Fordham University; A.M., Seton Hall University

FILOMENA P. SCUDERI (9-65), *Associate Professor, Health and Physical*
Education

B.S., Panzer College; M.A., New York University

JOHN SHENIS (9-65), *Associate Professor, Political Science*

B.A., Upsala College; M.A., Ph.D., New York University

BARBARA A. SHEPARDSON (3-59), *Assistant Professor, Psychology*

B.A., Stanford University; M.A., Columbia University

DOLORES P. SHIPOS (2-66), *Instructor, Health and Physical Education*
B.S., M.A., Russell Sage College

MARTIN SIEGEL (9-60), *Professor, History*
B.A., Rutgers University; M.A., Ph.D., Columbia University

ALFRED A. SILANO (9-60), *Associate Professor, Chemistry-Physics*
B.S.E., Ed.M., Rutgers University; M.S., Newark College of Engineering

CHARLES SIMONDS (9-69), *Instructor, Fine Arts*
B.A., University of California; M.F.A., Rutgers University

GEORGE SISCO (9-66), *Assistant Dean, Academic Administrative Services*
Assistant Professor
B.A., Newark State College; M.A., Jersey City State College

ROBERT SITELMAN (9-67), *Assistant Professor, Philosophy*
B.A., Hunter College; M.A., Columbia University

DOROTHY A. SKED (9-65), *Assistant Reference Librarian*
Instructor
B.S., Newark State College; B.L.S., Trenton State College

JOHN J. SLADICKA JR. (9-65), *Assistant Professor, Industrial Studies*
B.S., M.A., Millersville State College

MARY SLAVITT (9-67), *Coordinator, Certification Programs*
Assistant Professor
B.A., Smith College; M.A., Newark State College

AMELIA L. SMITH (9-66), *Associate Professor, Biological Sciences*
B.S., Ursinus College; M.S., Rutgers University

NETTIE D. SMITH (9-56), *Professor, Health and Physical Education*
B.S., Ohio State University; M.A., Ed.D., New York University

SALLY ANN SNYDER (9-65), *Assistant Professor, Educational Arts and Systems*
A.B., Wilson College; M.Ed., Goucher College

VANCE B. SNYDER (9-56), *Professor, Industrial Studies*
Chairman, Department of Industrial Studies
B.S., State Teachers College, Millersville, Pennsylvania
M.S., University of Maryland; Ed.D., New York University

CAYETANO J. SOCARRAS (9-69), *Professor, Foreign Languages*
Lcdo. in Diplomacy, Lcdo. in Public Administration, LL.D., S.Sc.D., University
of Havana; Ph.D., New York University

JAY L. SPAULDING (9-70), *Assistant Professor, History*
B.A., Bethel College; M.A., Ph.D., Columbia University

GEORGE STANG (6-70), *Director, Professional Laboratory Experiences*
Assistant Professor
B.A., M.A., Montclair State College

FRANCES M. STERN (9-67), *Assistant Professor, Psychology*
A.B., M.A., Newark State College

H. WILLARD STERN (9-61), *Associate Professor, Philosophy*
B.A., St. John's College; M.Ed., Temple University; Ph.D., Rutgers University

E. THEODORE STIER (4-60), *Director, Admissions*
Assistant Professor
B.Sc., Ed.M., Rutgers University; Ed.D., Yeshiva University

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Professor, Special Education and Individualized Services
B.S.S.W.; M.S.W., Washington University; D.S.W., Columbia University

VIRGINIA STOTZ (9-66), *Assistant Professor, Fine Arts*
B.S., Skidmore College, M.A., New York University, School of Education;
M.A., New York University, School of Fine Arts

DOROTHY B. STRAUSS (9-64), *Professor, Psychology*
B.A., Brooklyn College; M.A., Ph.D., New York University

SYLVIA STRAUSS (9-66), *Associate Professor, History*
B.A., City College of New York; M.S., Columbia University;
Ph.D., Rutgers University

DOROTHY S. STRICKLAND (9-70), *Associate Professor, Early*
Childhood Education
B.S., Newark State College; M.A., Ph.D., New York University

DONALD A. STRUYK (9-62), *Associate Professor, Chemistry-Physics*
B.A., M.A., Montclair State College; M.S., Newark College of Engineering

CATHERINE M. STULB (9-58), *Assistant Professor, Health and Physical Education*
B.Ed., Plymouth State College; M.S., University of Tennessee

MARJORIE A. SUGG (9-68), *Instructor, Sociology, Anthropology*
and Social Work
A.B., Bryn Mawr; M.A., Rutgers University

JAMES E. SUITER (9-65), *Professor, English*
A.B., M.A. Rutgers University; Ph.D., New York University

DAVIDA R. SUSSELMAN (9-67), *Assistant Professor, Educational Arts and Systems*
B.A., M.A., Jersey City State College; M.S., Yeshiva University

IRWIN N. TALBOT (9-72), *Associate Professor, Political Science*
Chairman, Department of Political Science
B.A., Lafayette College; M.P.A., Ph.D., New York University

M. PHYLLIS TALLERICO (9-62), *Catalog Librarian*
Assistant Professor
A.B., University of Miami; M.A., Peabody College; M.L.S., Rutgers University

DOUGLAS W. TATTON (9-49), *Professor, Fine Arts*
B.S., Newark State College; M.A., Columbia University
Ed.D. Rutgers University

BARBARA TAYLOR (11-69), *Assistant Registrar*
A.B., Bucknell University

JOHN T. TEHIE (9-63), *Professor, Educational Policy Sciences*
Chairman, Department of Educational Policy Sciences
B.S., University of Pittsburgh; M.A., Ph.D., Columbia University

EDWARD TEMKIN (9-69), *Assistant Professor, Communication Sciences*
B.A., University of Connecticut; B.L.S., Syracuse University;
M.A., Seton Hall University

JAY TERAN (9-69), *Assistant Professor, English*
A.B., Montclair State College; M.A., University of Maryland

ARTHUR L. TERR (9-66), *Professor, Special Education and*
Individualized Services
A.B., Lebanon Valley College; M.S., Syracuse University;
Ed.D., Columbia University

GLENN M. THATCHER (7-70), *Associate Professor, Industrial Studies*
B.S., Florida State University; M.S., Appalachian State
University; Ph.D., Southern Illinois University

MARY L. THETFORD (9-72), *Assistant Professor, Educational Arts and Systems*
B.A., Trenton State College; M.Ed., Rutgers University

JANET THIGPEN (9-68), *Assistant Professor, Health and Physical Education*
B.S., North Texas State; M.Ed., University of Texas; M.S.,
Ph.D., East Texas State University

EDWIN N. THOMASON (9-53), *Professor, English*
B.A., Wofford College; M.A., Ed.D., Columbia University

MILDRED C. TIRADO (9-72), *Assistant Director, Exceptional Educational
Opportunities Program*
B.A., Edgewood College

STUART TOPPER (9-69), *Instructor, Fine Arts*
B.A., M.F.A., Rutgers University

MAYOLO G. TORRES (9-70), *Instructor, Foreign Languages*
B.S.Ed., University of East Manila; B.A., M.A., Letran College;
M.A., Fordham University

DANIEL V. TOUSE (8-71), *Assistant Registrar*
B.A., M.S., State University College, Plattsburgh

DAVID C. TROY (9-67), *Instructor, Fine Arts*
B.F.A., Rhode Island School of Design; M.F.A., Cornell University

CHARLES J. TUNSON (9-69), *Assistant Professor, History*
B.A., Montclair State College; M.A., Seton Hall University

JUDITH L. UNGER (7-72), *Assistant Director, Financial Aid*
B.S., Fairleigh Dickinson University

GUNNAR URANG (9-70), *Associate Professor, English*
B.A., Bob Jones University; M.A., Ph.D., University of Chicago

SAMUEL M. VALLA (9-62), *Associate Professor, Special Education and
Individualized Services*
B.S., University of Nebraska; M.A., University of Detroit

GLORIA L. VALONE (9-63), *Assistant Director, Library Services*
Assistant Professor
A.B., Ohio Northern University; M.S., Edinboro State College;
M.L.S. Rutgers University

BARBARA VAN ATTA (9-68), *Assistant Professor, Special Education and
Individualized Services*
B.A., M.A., Newark State College

MELBOURNE P. VAN NEST (9-60), *Associate Professor, Industrial Studies*
B.S., Trenton State College; M.A., New York University

ANNE VENEZIA (9-67), *Associate Professor, Health and Physical Education*
B.S., Ithaca College; M.S.Ed., Hofstra University

THEODOSIUS W. VICTORIA (9-69), *Instructor, Fine Arts*
A.A.S., Suffolk County Community College; B.S., State University of New Paltz,
New York; M.F.A., Rutgers University

WILLIAM G. VINCENTI (9-67), *Veterans Advisor*
Instructor
B.A., M.A., Newark State College

RAGHUNATH A. VIRKAR (9-68), *Associate Professor, Biological Sciences*
B.S., M.S., University of Bombay; Ph.D., University of Minnesota

ROBERT J. VISCUSI (9-70), *Instructor, English*
A.B., Fordham College; M.A., Cornell University

JOSEPH A. VITALE (12-64), *Director, Academic and Career Planning and Placement*
Instructor
B.A., Montclair, M.A., Seton University

JUDITH A. VITOLO (7-70), *Academic Advisor*
B.A., Jersey City State College

JOSEPH B. VOLPE (9-64), *Associate Professor, Music*
B.S., M.A., New York University

ROBERT VOS (9-72), *Instructor, Industrial Studies*
B.S., M.S., Southern Illinois University

DAVID M. WALKER (9-70), *Instructor, Sociology, Anthropology and Social Work*
B.A., Drew University; M.A., New School for Social Work

MARY ANN WALKO (3-66), *Assistant to the Dean of Students*
Instructor
B.A., M.A., Newark State College

RICHARD B. WALTER (9-72), *Assistant Professor, Communication Sciences*
B.S., M.S., Indiana University; Ph.D., Ball State University

DAVID K. WARD (9-58), *Associate Professor, Biological Sciences*
B.S., Upsala College; M.Ed., University of Maine

RUTH E. WARD (9-68), *Associate Professor, Special Education and
Individualized Services*
B.A., Oberlin College; M.S., New York School of Social Work;
Ed.D., Teachers College, Columbia

JANE F. WASE (9-70), *Assistant Professor, Sociology, Anthropology and
Social Work*
A.B., M.A., Ph.D., Rutgers University

HAWLEY C. WATERMAN (8-69), *Director, Athletics*
Instructor
B.S., M.S., Springfield College

CATHERINE WEHRER (11-69), *Academic Advisor*
B.A., Paterson State College; M.A., Syracuse University

MYRA L. WEIGER (9-70), *Instructor, Educational Arts and Systems*
B.A., Montclair State College; M.A., Newark State College

BERNARD WEINSTEIN (9-65), *Associate Professor, English*
B.A., City College of New York; M.A., Ph.D., New York University

ROBERT H. WEISS (7-71), *Academic Advisor*
A.A., Union College; B.A., Fairleigh Dickinson University

STUART WELCH (9-68), *Associate Professor, Educational Policy Sciences*
B.A., Montclair State College; M.Ed.D., Rutgers

DOROTHY W. WELLE (9-68), *Assistant Professor, Communication Sciences*
A.B., M.A., Newark State College

CHARLES W. WENDELL (9-69), *Associate Professor, Foreign Languages*
Chairman, Foreign Languages
A.B., M.A., Catholic University of America; Ph.D., Yale University

FRANA S. WENDELL (9-72), *Professor, Sociology, Anthropology and Social Work*
Chairman, Department of Sociology, Anthropology and Social Work
A.B., M.A., Catholic University; Ph.D., Fordham University

EVELYN WILLSON WENDT (2-57), *Professor, English*
B.A., Hunter College; M.A., Ed.D., Columbia University

SIDELLE M. WERTHEIMER (3-64), *Instructor, Mathematics*
B.A., Brooklyn College; M.A., Columbia University

MARTHA WESMAN (9-66), *Assistant Registrar*
Instructor
B.A., Hunter College; M.A., Newark State College

JESLYN A. WHEELLESS (10-70), *Assistant to the Director, Teaching Performance Center*
B.A., University of North Carolina; M.Ed., North Carolina State University

ROBERT H. WHITMORE (9-70), *Instructor, Health and Physical Education*
B.S., Lynchburg College; M.Ed., University of Virginia

THOMAS B. WILBER (9-60), *Associate Professor, Fine Arts*
B.A., Virginia Military Institute; M.F.A., Princeton University; M.A.T., Yale University

EDWIN J. WILLIAMS (9-68), *Assistant Professor, Educational Policy Sciences*
B.A., Duke University; M.A., Teachers College, Columbia University

FRANK C. WILLIAMS (1-72), *Assistant Director, Admissions*
B.A., Montclair State College

JAMES F. WILSON (10-72), *Assistant Director, Admissions*
B.A., Rutgers University

REGINA WOODHOUSE (11-67), *Assistant Registrar*
B.A., Brooklyn College

SEYMOUR WELLEN (9-71), *Associate Professor, Sociology, Anthropology and Social Work*
B.A., New York University; M.A., Ph.D., Northwestern University

BONNIE YEZO (10-70), *Assistant Director, Admissions*
B.A., Montclair State College

EDWARD YEZO (9-69), *Assistant to the Dean, Division of Graduate Studies*
Instructor
B.A., Curry College; M.Ed., Springfield College

ADELLA C. YOUTZ (9-64), *Professor, Psychology*
Chairman, Department of Psychology
A.B., Oberlin College; M.A., University of Minnesota; Ph.D., Yale University

MARY E. ZELONIS (9-70), *Instructor, Health and Physical Education*
B.A., M.A., Jersey City State College;
R.N., School of Nursing Medical Center, Jersey City

LAWRENCE H. ZIMMER (9-65), *Associate Professor, History*
B.S., B.A., Bowling Green State University; M.S., University of Buffalo;
Ph.D., Rutgers University

LOWELL J. ZIMMER (9-64), *Assistant Professor, Music*
B.S., Hartwick College; M.A., Columbia University

R. ERIK ZIMMERMAN (9-71), *Associate Professor, Earth and Planetary Environments*
B.A., Pomona College; M.A., Ph.D., University of California, Los Angeles

ROBERT J. ZITO (9-68), *Associate Professor, Psychology*
B.A., Montclair State College; M.A., George Peabody College;
Ed.D., Rutgers University

CONSTANTINE N. ZOIS (9-67), *Assistant Professor, Earth and Planetary Environments*
B.A., Rutgers University; M.S., Florida State University

EDWARD J. ZOLL (9-60), *Professor, Mathematics*
B.A., St. John's University; M.A., Ed.D. New York University

GLORIA M. ZULUMIAN (9-71), *Instructor, Sociology, Anthropology and Social Work*
B.A., M.A., Jersey City State College

WILLARD E. ZWEIDINGER (2-35), *Acting Associate Dean, Professor, Health and Physical Education*
College Marshal

Professors Emeriti

MARY M. BARLETT, *Professor Emeritus, English*
B.A., Barat College; M.A., Columbia University

GUY V. BRUCE, *Professor Emeritus, Science*
B.S., State Teachers College, Albany, New York; M.A., New York University

JAMES E. DOWNES, *Professor Emeritus, Political Science*
B.A., Franklin and Marshall College; M.A., New York University

LENORE VAUGHN-EAMES, *Professor Emeritus, English*
Diploma, State Normal School, Newark
B.S., M.A., Ed.D., New York University
Dr. of Letters (*Honoris Causa*), Newark State College

HARRIET W. WHITEMAN, *Dean Emeritus of Students*
B.S., Simmons College; M.A., Columbia University
Ed.D., New York University
Dr. of Letters (*Honoris Causa*), Newark State College



Aug. 20	Monday	Change of partial schedule, advance registration students only
Aug. 21	Tuesday	
Aug. 23	Thursday	Registration for matriculated undergraduate and graduate students
Aug. 24	Friday	Registration for pre-matriculated undergraduate students, non-matriculated students holding the bachelor's degree, and certification students
Aug. 27	Monday	Change of full schedule, advance registration students only
Aug. 29	Wednesday	Registration for non-matriculated students
Aug. 30	Thursday	Late Registration

Fall Semester

Sept. 5	Wednesday	First day of classes, all divisions
Sept. 20	Thursday	Convocation
Oct. 31	Wednesday through	Advisement period for students considering withdrawal from fall semester courses
Nov. 12	Monday	
Nov. 13	Tuesday	* Last day to withdraw from fall semester courses
Nov. 21	Wednesday	Thanksgiving recess begins at close of day
Nov. 26	Monday	Classes resume
Nov. 26	Monday through	Advance registration for spring 1974 semester
Dec. 17	Monday	
Dec. 22	Saturday	Last day to convert "Incomplete" grades from preceding spring semester and summer session
		** Fall semester ends at close of day.

Mid-Year Studies Program

Jan. 2	Wednesday	Classes begin
Jan. 18	Friday	Classes end

Spring Semester

Jan. 21	Monday	First day of classes, all divisions
Mar. 18	Monday through	* Advisement period for students considering withdrawal from spring semester courses
Mar. 28	Thursday	
Mar. 29	Friday	* Last day to withdraw from spring semester courses
Apr. 8	Monday through	Advance registration for fall 1974 semester
Apr. 19	Friday	
Apr. 12	Friday	Good Friday: no classes
Apr. 13	Saturday	No classes
May 18	Saturday	Last day to convert "Incomplete" grades from preceding fall semester
		** Spring semester ends at close of day
May 28	Tuesday	Commencement

Interession

May 20	Monday	Classes begin
June 13	Thursday	Classes end

Summer Session

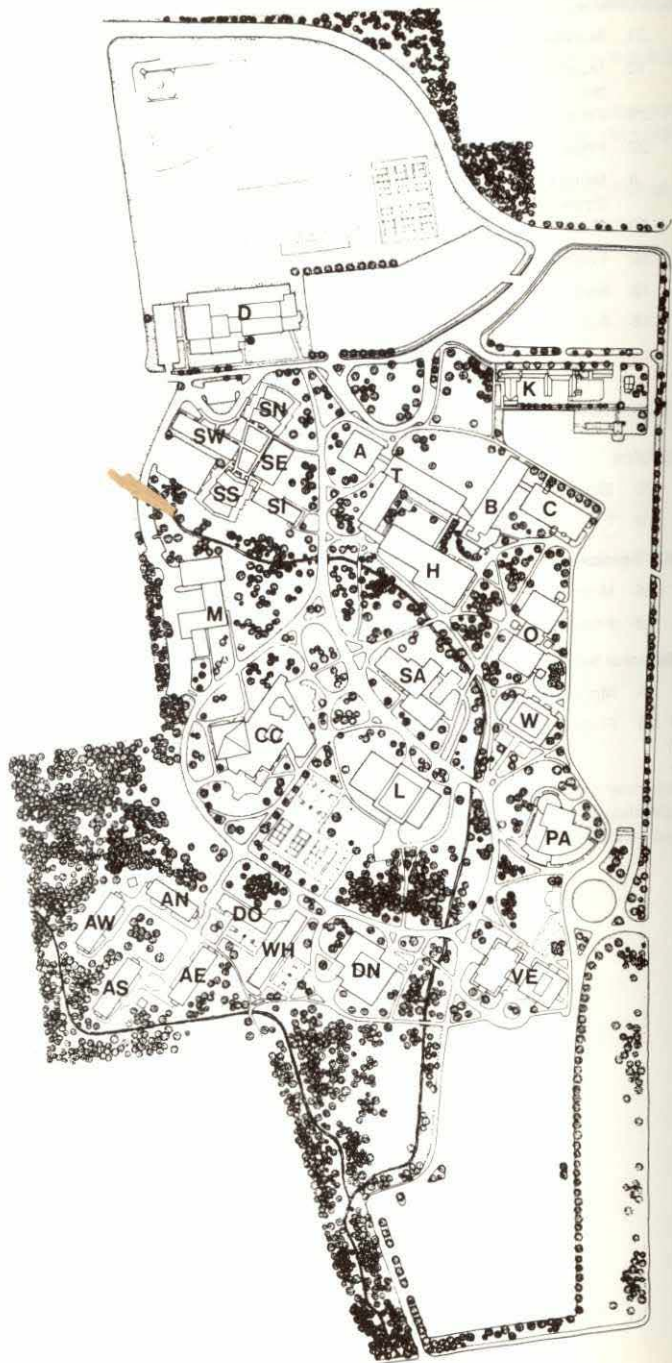
June 24	Monday	Classes begin
Aug. 2	Friday	Classes end

Post-Summer Session

Aug. 5	Monday	Session begins
Aug. 16	Friday	Session ends

* Students may withdraw during first half of short-term courses.

** The administration of a final examination is an instructional option. If a final is given, it should be scheduled into the sequence of the semester.



From US Route 22:

A — EASTBOUND: Drive under Parkway, turn right onto Route 82 East. Continue toward Elizabeth. Campus is within 2 miles.
 B — WESTBOUND: Drive under Parkway, keep right and follow signs to Elizabeth. Turn right on Morris Avenue.

From GARDEN STATE PARKWAY:

C — NORTHBOUND: Leave Parkway at Exit 140 onto Route 22 East. Turn right onto Route 82 East.
 D — SOUTHBOUND: Leave Parkway at Exit 140-A onto Route 22 West. Turn right onto Route 82 East.

From US ROUTES 1-9:

E — NORTHBOUND: Enter Elizabeth and turn left through traffic circle onto Route 439 West (Elmora Avenue). Continue to Morris Avenue (Route 82). Campus is on the left.
 F — SOUTHBOUND: Enter Elizabeth. Follow signs to North Avenue. Turn right onto North Avenue (Route 439) and continue to Route 82 (Morris Avenue). Turn right. Campus is on left.

From NEW JERSEY TURNPIKE:

G — NORTHBOUND: Leave Turnpike at Exit 11 for Garden State Parkway, North. Leave Parkway at Exit 140 onto Route 22 East. Turn right onto Route 82 East.
 H — SOUTHBOUND: Leave Turnpike at Exit 14 for Route 1-9, South. Enter Elizabeth. Follow signs to North Avenue. Turn right onto North Avenue (Route 439) and continue to Route 82 (Morris Avenue). Turn right. Campus is on left.

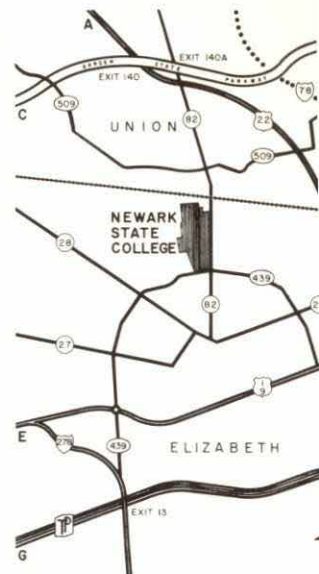
By TRAIN:

The PENN-CENTRAL STATION at Elizabeth is 2 miles from Campus by bus or taxi.

By BUS:

PUBLIC SERVICE #8 between Elizabeth and Springfield passes the Campus on Morris Avenue.
 ELIZABETH - Union - Hillside - Irvington # 6 between Elizabeth and Irvington Center passes the campus on Morris Avenue.

SOMERSET BUS CO. #143 between Plainfield and Times Square, New York stops at Salem Road and Morris Avenue.



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